CITY OF COLTON

CLIMATE ACTION PLAN

City of Colton
650 N. La Cadena Drive
Colton, California 92324

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Based on **San Bernardino County Regional Greenhouse Gas Reduction Plan (2013)** prepared by:

San Bernardino Association of Governments (SANBAG)

ICF International

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Acronyms and Abbreviations

20X2020 goal	20% reduction in urban per capita use by December 31, 2020 (referred to as the
AB	Assembly Bill
ATVs	all-terrain vehicles
AVL	automatic vehicle location
BAPIS	Bus Arrival Prediction Information System
BAU	Business-as-Usual
BBARWA	Big Bear Area Regional Wastewater Agency
BRT	Bus Rapid Transit
BVES	Bear Valley Electric Service
CAA	Clean Air Act
CAFE	Corporate Average Fuel-Economy
Cal-EPA	California Environmental Protection Agency
CAP	climate action plan
CARB	California Air Resources Board
CCAs	Community Choice Aggregations
CCR	California Code of Regulations
CEC	California Energy Commission
CEEP	Community Energy Efficiency Program
CEQA	California Environmental Quality Act
CFL	compact fluorescent
CH_4	methane
CIC	CAP Implementation Coordinator
CIT	CAP Implementation Team
CIM	California Institution for Men
CLEO	Custom Language Efficiency Outreach
CO_2	carbon dioxide
CPUC	California Public Utilities Commission
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
ESPs	energy service providers
°F	degrees Fahrenheit
FED	Functional Equivalent Document
FY	fiscal year

GHG	greenhouse gas
GPS	global positioning system
GTFS	General Transit Feed Specification
GWh	gigawatt-hours
GWP	global warming potential
HERS	Home Energy Rating System
HFCs	hydrofleorocarbons
HQTA	High Quality Transit Areas
HVAC	heating/venting and air conditioning
I	Interstate
IEUA	Inland Empire Utilities Agency
IOU	investor-owned utilities
IPCC	Intergovernmental Panel on Climate Change
ITS	Intelligent Transportation Systems
IVR	Interactive Voice Response
kW	kilowatts
LCFS	Low Carbon Fuel Standard
LED	light emitting diode
LFGTE	landfill-gas-to-energy
LRTP	Long Range Transit Plan
MCAP	municipal inventory and reduction plan
MEU	Mobile Energy Unit
$MMTCO_2e$	million MTCO2e
MPOs	metropolitan planning organizations
$MTCO_2e$	metric tons of carbon dioxide equivalent
MW	megawatt
N_2O	nitrous oxide
NPV	Net Present Values
ODS	ozone-depleting substances
PACE	Property Assessed Clean Energy
Partnership	San Bernardino Associated Governments and Participating San Bernardino County Cities Partnership
PFCs	perfluorinated carbons

Plan	San Bernardino County Regional Greenhouse Gas Reduction Plan
PPAs	Power Purchase Agreements
ppb	parts per billion
ppm	parts per million
ppt	parts per trillion
PS	GHG Performance Standard for New Development
QR	Quick Response
Reporting Rule	Greenhouse Gas Reporting Rule
RHNA	Regional Housing Needs Allocation
RPS	Renewable Portfolio Standard
RTPs	Regional Transportation Plans
SANBAG	San Bernardino Associated Governments
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCGC	Southern California Gas Corporation
SCS	sustainable communities strategy
SF_6	sulfur hexafluoride
SMP	Sustainable Master Plan
TDM	Transportation Demand Management
TRP	trip reduction plan
TSM	Transportation Systems Management Plan
UC	University of California
UPRR	Union Pacific Railroad
VERA	Voluntary Emission Reduction Agreement
VMT	vehicle miles traveled
VVWA	Victor Valley Wastewater Agency
WWTPs	wastewater treatment plants

Chapter 1
Introduction

1.1 What Is This Document?

This Climate Action Plan (CAP) for the City of Colton (City) presents the greenhouse gas (GHG) inventories, identifies the effectiveness of California initiatives to reduce GHG emissions, and identifies local measures that were selected by the City to reduce GHG emissions under the City's jurisdictional control to achieve the City's identified GHG reduction target. The City of Colton participated in the San Bernardino County Regional Greenhouse Gas Reduction Plan (Plan) which presents the collective results of all local efforts to reduce GHG emissions consistent with statewide GHG targets expressed in Assembly Bill (AB) 32, the "Global Warming Solutions Act of 2006" and Senate Bill (SB) 375. Colton used the technical information within the Plan in the development of the CAP.

This CAP builds on the regional work and refines it to provide City-specific information and to develop the local implementation plan for City-selected GHG reduction measures. This CAP identifies how the GHG reduction measures will be implemented and monitored by the City going forward to ensure that progress is being made toward the GHG reduction target.

1.2 Benefits of a Regional GHG Reduction Plan

Participating cities in the SANBAG effort, including the City of Colton, chose to prepare GHG inventories and evaluate local GHG reduction measures in concert. SANBAG, Colton and the other Partnership cities see several advantages to this approach.

Economies of Scale: Although many aspects of GHG planning and policy making are unique to each city, certain steps are standard and are conducted in exactly the same way by all cities. These steps include: GHG inventory data collection; GHG inventory calculations; forecast of 2020 GHG emissions; review of standard GHG reduction measures; quantification of the benefit of state level GHG reduction measures; and preparation of basic regulatory language and text common to GHG reduction plan documents in California. Completing these standard steps together saves both money and time for all Partnership cities.

Assurance of Standard Methods, Data, and Baseline Year: Even though GHG inventory protocols are standard and communities generally follow the recommended protocols, some subtle differences exist that can limit comparability between cities. Of particular importance to a comparison are the selection of baseline year, the type of data that was collected, methodologies, and boundaries. With a regional inventory and reduction plan, Partnership cities can be assured of an "apples to apples" comparison across all sectors for city-to-city comparisons as well as city-to-region comparisons.

Regional Communication and Education: Similar to most communities in California and across the U.S., San Bernardino cities are undertaking a GHG inventory and reduction plan for the first time. As city staff, stakeholders, and residents go through this process, each learns lessons that can be shared with other communities. The ability to share information benefits all Partnership cities.

Regional View: Certain sectors of GHG emissions are the result of activity that occurs only within the boundary of a city, for example residential natural gas use. Other emissions, such as on-road transportation, are the result of activity that occurs across jurisdictional boundaries and both jurisdictions are responsible for the emission. For certain sectors, looking only at the GHG emissions of a single city is of limited utility and GHG reduction planning cannot be undertaken alone. This Plan supports both city-specific and regional planning.

Programmatic EIR to Simplify CEQA Compliance: The State California Environmental Quality Act (CEQA) Guidelines require lead agencies to describe, calculate, or estimate the amount of GHG emissions that would result from a project. CEQA Guidelines (Section 15183.5) also allow individual projects to tier off of a larger (and certified) GHG reduction plan. Thus, individual projects do not need to each conduct a GHG analysis as part of CEQA if they can demonstrate consistency with the larger plan. By completing a common basic plan and a subsequent programmatic EIR, all projects in the region can tier off the EIR and be considered less than significant under CEQA if they show consistency with the regional plan. The Program EIR was completed and certified by SANBAG in March 2014.

1.3 SANBAG's Role

The *San Bernardino County Regional Greenhouse Gas Reduction Plan* has been sponsored and facilitated by SANBAG, the regional transportation planning agency in San Bernardino County. SANBAG is leveraging its role as a transportation planning agency and the regional scope of its authority to reduce GHG emissions in several emissions sectors in the region. As a regional agency, SANBAG is in a unique position to support coordinated city efforts and facilitate regional dialogue and cooperation on GHG issues. As the transportation agency, SANBAG also has a critical role in reducing the region's GHG emissions. On-road transportation contributes 35% of the region's GHG emissions. SANBAG worked closely with Southern California Association of Governments (SCAG) in the development and adoption of SCAG's *2012–2035 Regional Transportation Strategy and Sustainable Communities Strategy*, the benefits of which are captured for the region in this analysis. SANBAG is also spearheading efforts to expand Metrolink and is leading other regional efforts related to energy efficiency and renewable energy. SANBAG is planning to implement a regional energy efficiency and water conservation improvement loan program (AB 181 and AB 474 - PACE) for retrofits to existing buildings and is participating in a regional joint solar power purchase agreement.

1.4 How Has the City Used the Regional Plan in Colton's CAP?

The San Bernardino County Regional GHG Reduction Plan has been used for several purposes for the City of Colton in the development of this CAP.

Reference Document: The Regional Plan established a baseline GHG inventory for the City and the region as a whole. This baseline is referenced for all future GHG analyses and planning. This document contains basic terms and concepts and regulatory information that is useful for future planning (city-specific or regional) or in communicating to a larger audience.

Climate Action Plan Template: The Regional Plan provided the technical information to support the City's selection of appropriate targets and GHG emissions reduction measures that could be included in the City's CAP. The Regional Plan was provided in an electronic format that allowed more rapid preparation of the CAP. The City has developed its own schedule, funding, and implementation plan consistent with the City's existing infrastructure and procedures and in tune with the City's unique priorities and needs.

Outline for a Local Climate Action Plan: The CEQA guidelines adopted pursuant to SB 97 specify that a GHG reduction plan must include the following elements in order to allow for tiering under CEQA. Elements that have already been developed as part of the Regional Plan are identified and areas where local refinement was provided by the City are also noted.

- An inventory of GHG emissions (included in the Regional Plan).
- A forecast of future GHG emissions (included in the Regional Plan).
- An identified GHG reduction goal (included in the Regional Plan).
- Measures to reduce GHG emissions under the control of the jurisdiction (included in the Regional Plan).
- Implementation actions to ensure that the measures result in actual reductions (included in the Regional at a general level and then refined by the City to be specific to the City's procedures).
- Monitoring of the plan's success over time (included in the Regional Plan and then requires local refinement).
- Adaptation and revision of the plan over time as needed to meet the adopted goal (included as part of the implementation plan for this CAP).

The Regional Plan provided many of the required components of a GHG reduction plan, as listed above. Since the Regional Plan contained only basic implementation steps that would apply to all cities, the primary effort by the City of Colton was to identify the specific schedule, funding, and implementation actions which are critical to the success of the GHG reduction effort.

1.5 Next Steps

SANBAG's adoption of the San Bernardino County Regional GHG Reduction Plan and certification of the Programmatic EIR for the Plan occurred in March 2014. This CAP was drafted based upon the information within the Plan and tiers from the Programmatic EIR for environmental review of the CAP. The City has developed its implementation and monitoring program to carry the GGH reduction measures forward and included those within this final CAP.

Once adopted, the City of Colton will begin working together with SANBAG, the other Partnership cities and with stakeholders, residents, and businesses within the community to implement GHG reduction measures and track success of the CAP.

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Chapter 2
Background Information

2.1 Greenhouse Gas Reduction and Climate Action Planning In California

This section describes important laws, policies and documents related to GHG emissions, including AB 32, SB 375, the Renewable Portfolio Standard, Pavley fuel economy standards (AB 1493), and the Low Carbon Fuel Standard (LCFS). This section also briefly discusses pending national legislation and the challenges associated with GHG reduction and climate action planning at the state level. Figure 2-1 displays a timeline of key state and federal regulatory activity.

2.1.1 Federal Regulation

Although there is currently no comprehensive federal law specifically related to climate change or the reduction of GHGs, regulation under the federal Clean Air Act is being implemented with the U.S. Environmental Protection Agency (EPA) in a lead role. The following federal regulations are related to climate change and GHG emissions.

2.1.1.1 Mandatory Greenhouse Gas Reporting Rule (2009)

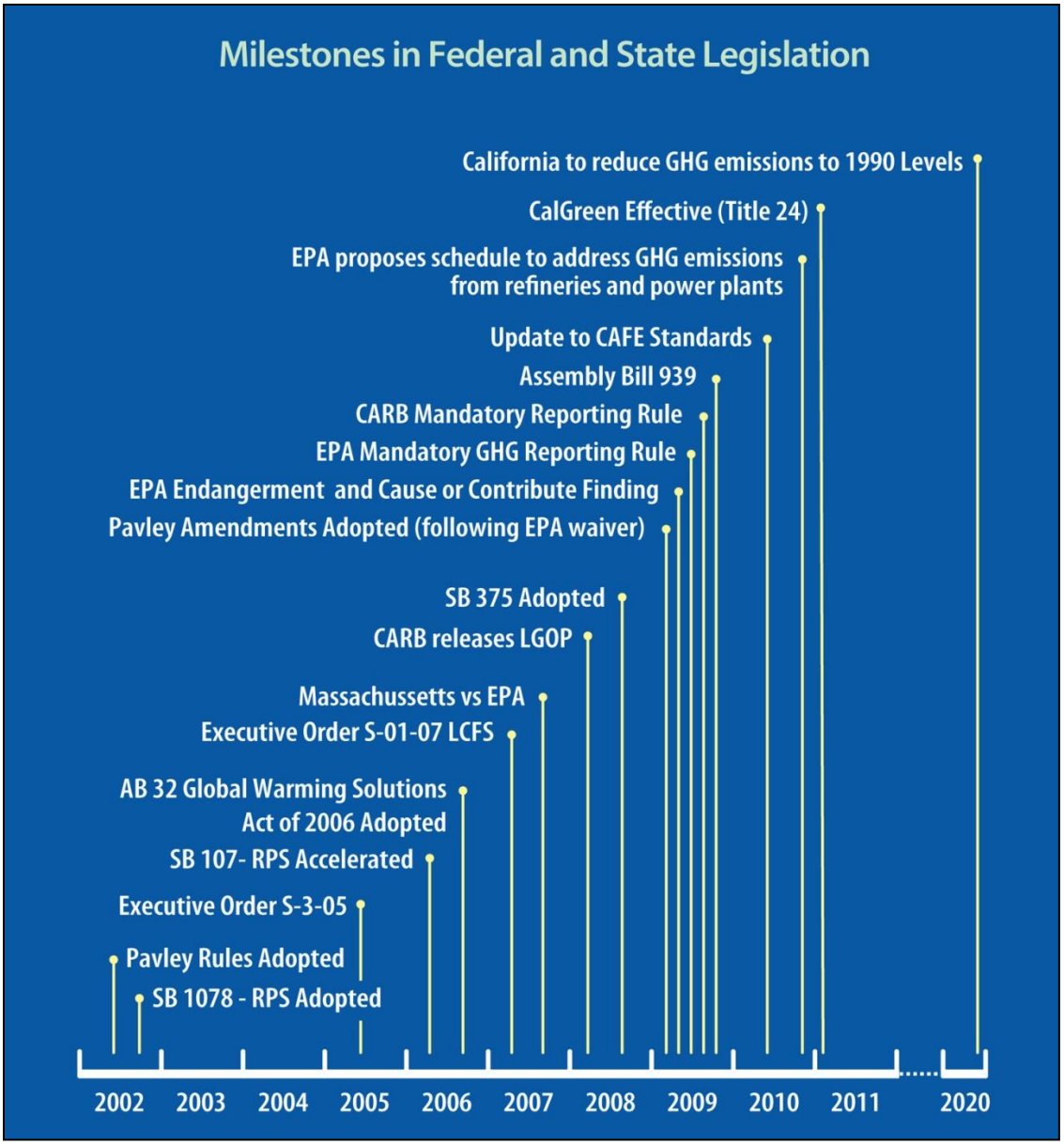
On September 22, 2009, EPA released its final Greenhouse Gas Reporting Rule (Reporting Rule). The Reporting Rule is a response to the fiscal year (FY) 2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110-161), which required EPA to develop "mandatory reporting of greenhouse gasses above appropriate thresholds in all sectors of the economy…" The Reporting Rule applies to most entities that emit 25,000 metric tons of carbon dioxide equivalent ($MTCO_2e$) or more per year. Starting in 2010, facility owners were required to submit an annual GHG emissions report with detailed calculations of facility GHG emissions. The Reporting Rule also mandates recordkeeping and administrative requirements in order for EPA to verify annual GHG emissions reports.

2.1.1.2 U.S. Environmental Protection Agency Endangerment and Cause and Contribute Findings (2009)

On December 7, 2009, EPA signed the Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act (CAA.) Under the Endangerment Finding, EPA finds that the current and projected concentrations of the six key well-mixed GHGs—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), perfluorinated carbons (PFCs), sulfur hexafluoride (SF_6), and hydrofluorocarbons (HFCs)—in the atmosphere threaten the public health and welfare of current and future generations. Under the Cause or Contribute Finding, EPA found that the combined emissions of these well-mixed GHGs from new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

These findings did not by themselves impose any requirements on specific industries or other entities. However, this action was a prerequisite to finalizing EPA's corporate average fuel economy (CAFE) standards for light-duty vehicles for future years.

Figure 2-1. Milestones in Federal and State Legislation and Regulation



2.1.1.3 Updates to Corporate Average Fuel Economy Standards (2010/2012)

The current CAFE standards (for model years 2011 to 2016) incorporate stricter fuel economy requirements promulgated by the federal government and the state of California into one uniform standard. Additionally, automakers are required to cut GHG emissions in new vehicles by roughly 25% by 2016 (resulting in fleet average of 35.5 miles per gallon or mpg by 2016). Rulemaking to adopt these new standards was completed in 2010. California agreed to allow automakers who show compliance with the national program to also be deemed in compliance with state requirements. The federal government issued new standards in summer 2012 for model years 2017–2025, which will require a fleet average in 2025 of 54.5 mpg.

2.1.2 State Regulation

California has adopted statewide legislation addressing various aspects of climate change and GHG emissions mitigation. Much of this legislation is not directed at citizens or jurisdictions specifically, but rather establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. Several executive orders related to the state's evolving climate change policy have also been adopted. The following state regulations related to climate change and GHGs may apply to implementation of the climate change element.

2.1.2.1 Executive Order S-03-05 (2005)

Signed by Governor Arnold Schwarzenegger on June 1, 2005, Executive Order S-3-05 asserts that California is vulnerable to the effects of climate change. To combat this concern, Executive Order S-3-05 established the following GHG emissions reduction targets for state agencies.

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80% below 1990 levels.

Executive orders are binding only on state agencies. Accordingly, EO S-03-05 will guide state agencies' efforts to control and regulate GHG emissions but will have no direct binding effect on local government or private actions. The secretary of the California Environmental Protection Agency (Cal-EPA) is required to report to the governor and state legislature biannually on the impacts of global warming on California, mitigation and adaptation plans, and progress made toward reducing GHG emissions to meet the targets established in this executive order.

2.1.2.2 Assembly Bill 1493—Pavley Rules (2002, Amendments 2009)

Known as "Pavley I," AB 1493 standards were the nation's first GHG standards for automobiles. AB 1493 requires the California Air Resources Board (CARB) to adopt vehicle standards that will lower GHG emissions from new light-duty autos to the maximum extent feasible beginning in 2009. Additional strengthening of the Pavley standards (referred to previously as "Pavley II", now referred to as the "Advanced Clean Cars" measure) has been proposed for vehicle model years 2017–2025. Together, the two standards are expected to increase average fuel economy to roughly 43 miles per gallon by 2020 (and more for years beyond 2020) and reduce GHG emissions from the transportation sector in California by approximately 14%. In June 2009, EPA granted California's

waiver request enabling the state to enforce its GHG emissions standards for new motor vehicles beginning with the current model year.

EPA and CARB have worked together on a joint rulemaking to establish GHG emissions standards for model-year 2017–2025 passenger vehicles. As noted above, the federal government completed rulemaking in summer 2012 resulting in adoption of new standards that would lead to fleet average of 54.5 mpg in 2025.

2.1.2.3 Senate Bills 1078 (2002), Senate Bill 107 (2006) and Senate Bill 2 (2011)—Renewable Portfolio Standard

SB 1078 and SB 107, California's Renewable Portfolio Standard (RPS), obligates investor-owned utilities (IOUs), energy service providers (ESPs), and Community Choice Aggregations (CCAs) to procure an additional 1% of retail sales per year from eligible renewable sources until 20% is reached, no later than 2010. The California Public Utilities Commission (CPUC) and California Energy Commission (CEC) are jointly responsible for implementing the program. Senate Bill 2 (2011) set forth a longer-range target of procuring 33% of retail sales by 2020.

2.1.2.4 Assembly Bill 32—California Global Warming Solutions Act (2006)

In September 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 establishes a cap on statewide GHG emissions and sets forth the regulatory framework to achieve the corresponding reduction in statewide emission levels. Under AB 32, CARB is required to take the following actions.

- Adopt early action measures to reduce GHGs.
- Establish a statewide GHG emissions cap for 2020 based on 1990 emissions.
- Adopt mandatory reporting rules for significant GHG sources.
- Adopt a scoping plan indicating how emission reductions would be achieved through regulations, market mechanisms, and other actions.

Adopt regulations needed to achieve the maximum technologically feasible and cost-effective reductions in GHGs.

There is presently discussion by CARB and some members of the California legislature about establishing a reduction target in law for the period after 2020, including 2030 and possibly 2050, but the timing for potential legislation is uncertain.

2.1.2.5 Executive Order S-01-07—Low Carbon Fuel Standard (2007)

Executive Order S-01-07 mandates: (1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10% by 2020, and (2) that an LCFS for transportation fuels be established in California. The executive order initiated a research and

regulatory process at CARB. CARB developed the LCFS regulation pursuant to the authority under AB 32 and adopted it in 2009.[1]

2.1.2.6 Senate Bill 375—Sustainable Communities Strategy (2008)

SB 375 provides for a new planning process that coordinates land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals established in AB 32. SB 375 requires regional transportation plans, developed by metropolitan planning organizations (MPOs) to incorporate a sustainable communities strategy (SCS) in their regional transportation plans (RTPs). The goal of the SCS is to reduce regional vehicle miles traveled (VMT) through land use planning and consequent transportation patterns. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development.

SCAG is the MPO responsible for the southern California region that includes San Bernardino County and the City of Colton. SCAG adopted an RTP/SCS in April 2012 designed to reduce passenger and light-duty vehicle per capita GHG emissions by 8% by 2020 and by 13% by 2035 compared to 2005 per capita GHG emissions levels. The RTP/SCS includes a combination of land use and transportation strategies to reduce VMT and associated GHG emissions. However, it should be noted the land use pattern in the SCS is not mandatory as local land use agencies retain their jurisdiction and authority over land use planning. The Regional Housing Needs Allocation (RHNA) must be consistent with the SCS and local cities must meet the RHNA for their city in their housing elements, but the RHNA does not specify the location or design of new housing, which is a prerogative of local planning.

2.1.2.7 California Energy Efficiency Standards for Residential and Nonresidential Buildings—Title 24 (2008), Green Building Code (2011), Title 24 Update (2014)

California has adopted aggressive energy efficiency standards for new buildings and has been continually updating them for many years. The latest updated standards were adopted in 2008. Also, in 2008, the California Building Standards Commission adopted the nation's first green building standards, which include standards for many other built environment aspects apart from energy efficiency. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code (24 California Code of Regulations [CCR]). Part 11 establishes voluntary standards that became mandatory in the 2010 edition of the code, including planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. The voluntary standards took effect on January 1, 2011. The latest update of the Title 24 energy efficiency standards was adopted in mid-2012 and went into effect July 1, 2014.

[1] The CARB approved the LCFS on April 23, 2009 and the regulation became effective on January 12, 2010 (California Air Resources Board 2011). The U.S. District Court for the Eastern District of California ruled in December 2011 that the LCFS violates the Commerce Clause of the U.S. Constitution. The CARB appealed this ruling in 2012 and on September 18, 2013, a 9th U.S. Circuit Court of Appeals panel upheld the LCFS, ruling that the program does not violate the Commerce Clause, and remanded the case to the Eastern District.

2.1.2.8 California Air Resources Board Greenhouse Gas Mandatory Reporting Rule Title 17 (2009)

In December of 2007, CARB approved a rule requiring mandatory reporting of GHG emissions from certain sources, pursuant to AB 32. Facilities subject to the mandatory reporting rule started to report their emissions from the calendar year 2009 and had to have those emissions verified by a third party in 2010. In general the rule applies to facilities emitting more than 25,000 $MTCO_2e$ in any given calendar year or electricity generating facilities with a nameplate generating capacity greater than 1 megawatt (MW) and/or emitting more than 25,000 $MTCO_2e$ per year. Additional requirements also apply to cement plants and entities that buy and sell electricity in the state.

2.1.2.9 State CEQA Guidelines (2010)

The State CEQA Guidelines require lead agencies to describe, calculate, or estimate the amount of GHG emissions that would result from a project. Moreover, the State CEQA Guidelines emphasize the necessity to determine potential climate change effects of the project and propose mitigation as necessary. The State CEQA Guidelines confirm the discretion of lead agencies to determine appropriate significance thresholds, but require the preparation of an environmental impact report (EIR) if "there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with adopted regulations or requirements" (Section 15064.4).

The guidelines were updated in 2010 to address GHG emissions. State CEQA Guidelines section 15126.4 includes considerations for lead agencies related to feasible mitigation measures to reduce GHG emissions, which may include, among others, measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision; implementation of project features, project design, or other measures which are incorporated into the project to substantially reduce energy consumption or GHG emissions; offsite measures, including offsets that are not otherwise required, to mitigate a project's emissions; and, measures that sequester carbon or carbon-equivalent emissions.

2.1.2.10 Greenhouse Gas Cap-and-Trade Program (2011)

On October 20, 2011, CARB adopted the final cap-and-trade program for California. The California cap-and-trade program will create a market-based system with an overall emissions limit for affected sectors. The program is currently proposed to regulate more than 85% of California's emissions and will stagger compliance requirements according to the following schedule: (1) electricity generation and large industrial sources (2012); (2) fuel combustion and transportation (2015). The first auction was in late 2012 with the first compliance year was in 2013.

2.1.3 Local Governments

The AB 32 Scoping Plan lays out California's plan for achieving the GHG reductions required by AB 32. Specifically the Scoping Plan describes a list of measures that the state will undertake, and the expected GHG reductions associated with these measures before 2020. Because the state does not have jurisdictional control over many of the activities that produce GHG emissions in California, the AB 32 Scoping Plan articulates a unique role for local governments in achieving the state's GHG reduction goals. The AB 32 Scoping Plan recommends local governments reduce GHG emissions from both their municipal operations and the community at large to a level that is 15% below

current levels. The 15% recommendation was based on CARB's estimate of 2005–2008 emissions at the time of the scoping plan because at that time CARB had not yet completed actual inventories for those years. In subsequent years, CARB completed the inventories for the 2005–2008 years. In order to meet the AB 32 target of 1990 levels, the state would have to reduce its emissions by 9 to 11% below 2005–2008 levels. CARB has not updated its recommendations to local governments since the 2008 adoption of the Scoping Plan.

In response to the AB 32 and the AB 32 Scoping Plan, many jurisdictions across California have completed a GHG Inventory and Reduction Plan, commonly called a Climate Action Plan or CAP. These plans generally address two types of emissions:

- The "community inventory"—emissions that arise from the community at large (residents, businesses, and their associated activities within the jurisdictional boundary).
- The "municipal inventory"—emissions that arise from the county/city's operations only (county/city buildings, vehicle fleet, activities required to provide services to the jurisdiction).

More than 50 jurisdictions in southern California have completed a community or municipal CAP, or both, including the City of Los Angeles, San Bernardino County, Anaheim, Beverly Hills, Pasadena, Hesperia, Apple Valley, and many others.

2.2 What Are We Already Doing?

This section describes large scale GHG planning efforts in southern California, including regional transportation planning; utility programs; SANBAG; and efforts in unincorporated San Bernardino County and several cities in San Bernardino County.

2.2.1 Regional Transportation Planning

On April 4, 2012, the Regional Council of SCAG adopted the *2012–2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS): Towards a Sustainable Future.* The RTP/SCS is the culmination of a multi-year effort involving stakeholders from across the SCAG Region. SCAG has prepared RTPs for the southern California region for over 30 years, with the primary goal of increasing mobility for the region's residents and visitors.

The 2012–2035 RTP/SCS includes the following key points.

- A strong commitment to reduce emissions from transportation sources to comply with SB 375, improve public health, and meet the National Ambient Air Quality Standards as set forth by the federal Clean Air Act. As such, the 2012–2035 RTP/SCS contains a regional commitment for the broad deployment of zero- and near-zero criteria pollutant emission transportation technologies in the 2023–2035 time frame and clear steps to move toward this objective. This strategy will have many co-benefits, including energy security, cost certainty, increased public support for infrastructure, GHG reduction, and economic development.
- A transportation infrastructure investment strategy that will benefit southern California, the state, and the nation in terms of economic development, competitive advantage, and overall competitiveness in the global economy in terms of attracting and retaining employers in the southern California region.

- A blueprint for improving quality of life for southern California residents by providing more choices for where they will live, work, and play, and how they will move around. It emphasizes transit and active transportation to allow residents to lead healthier, more active lifestyles.
- It is important to note that the land use pattern adopted in the SCS is not a mandatory land use pattern and no local government is obligated to amend their general plans to be consistent with the assumed land use pattern in the SCS if there are differences between a city's general plan and the land use pattern assumed in the SCS. SB 375 gave no authority to MPOs for local land use planning which is reserved for the authority of local cities and counties.

2.2.2 Utility Incentive Programs

Local and regional utility providers, including City of Colton Electric Utility, City of Colton Water Department, Southern California Edison, and Southern California Gas Company, have a wide range of incentive programs aimed at promoting energy efficiency and renewable energy use. These are summarized below. All properties within the City of Colton obtain electric service from the City of Colton Electric Department except for those serviced by Southern California Edison (SCE) shown on the map and list in Appendix C.

2.2.2.1 City of Colton Electric Department Programs

- **Program for Income Qualified customers:** Colton Electric Department (CED) offers residents who meet the federal low income requirements a maximum of $50 one time per fiscal year credit with an additional 94 kWh added to Tier 1 for 12 months. Starting in fiscal year 2016/2017 CED will move to 139 kWh each month per fiscal year to Tier 1 and will no longer provide a one-time assistance.
- **Medical Baseline Billing:** CED offers customers with qualifying medical conditions an adjustment to increase the baseline kilowatt hours on their utility bill. The baseline is increased so that the kilowatts hours that are used for life sustaining medical equipment are charged at the lowest tier.
- **Residential Energy Efficiency Rebate Program:** The CED offers a variety of residential customer rebates for specific energy efficiency home improvements. Rebates are provided for the following product list: Occupancy Sensors (Limit 8), Ceiling Fan (Limit 4, Must be Energy Star Approved), Box Fan (Limit 4), Wholehouse Fan, Evaporative Cooler, Room A/C (Must be Energy Star Approved), Solar Attic Fan, Solar Light Tube (Limit 2), Pool Pumps (Two Speed and Variable Speed only), Clothes Washer (Must be Energy Star Approved), Dishwasher (Must be Energy Star Approved), Refrigerators (Must be Energy Star Approved), LED Holiday/Decorative Lights rebate.
- **Residential A/C Tune-up Rebate Program:** CED offers customers A/C tune up rebates up to $60 for A/C units that do not exceed 5 tons.
- **Residential Air Conditioning Upgrade and Replacement Program:** CED offers rebates for the replacement and upgrade for packaged A/C units rated above a SEER 15.
- **LivingWise® School Program:** CED offers the Colton School District 6th grade classes this program which combines classroom learning and home retrofit/audit projects completed by the students and their parents. It provides a LivingWise® Activity Energy Efficiency Kit for each Colton 6th grade student.

- **Refrigerator Replacement Program:** CED offers a Residential Refrigerator Replacement program for qualified customers. The program offers customers a low cost replacement for their old inefficient refrigerator. The customer will make 12 payments of $15 a month for 12 consecutive months for a total of $180. The customer will be charged the monthly fee of $15 directly on their utility bill.
- **Online Energy Star Product Catalog:** CED residential customers can order specially reduced priced energy efficiency related products such as LED light bulbs and advanced power strips.
- **Residential Energy Audits:** Residential customers with high energy bills or receiving a solar rebate can qualify for a residential energy audit with possible direct installation of selected energy efficiency measures.
- **Residential Weatherization Rebate Program:** CED offers residential customers rebates for installing replacement energy star windows and insulation.
- **Residential Tree Rebate Program:** CED offers $50 for qualifying trees to provide shade for the residence home reducing overall energy needed for cooling. There is a lifetime limit of 5 trees and a maximum of $250m per household.
- **Energy Saving Tips:** CED provides seasonal and year-round tips for how customers can save energy.
- **Property Assessed Clean Energy (PACE) Energy Savings Project:** This program assists energy-efficiency financing in the City of Colton service area through third party financing institutions.
- **Mobile Home Retrofit Program:** Provides weatherization and other maintenance for energy efficiency in mobile and manufactured homes.
- **Commercial Energy Lighting and Equipment Rebates:** Commercial and industrial buildings can apply for rebates given for improving lighting and equipment when increasing energy efficiency and lowering consumption.
- **Small Commercial Business Energy Audit:** Qualifying small businesses can apply for an energy audit with potential for energy efficiency direct installations.
- **Commercial Refrigeration Energy Efficiency Program:** CED will assist businesses in upgrading to high efficiency motors, evaporator fan controllers, anti-sweat heater controls, strip curtains, door gaskets, and door closures. The program is available for any commercial business that has Colton Electric Utility as their service provider. Businesses that use refrigeration, such as convenience stores, mini marts, and restaurants are encouraged to apply.
- **Industrial (TOU) Customer Online Energy Review:** The utility provides TOU customers access to their specific interval meter data through Automated Energy's website. This assists TOU customers to manager their electricity efficiently for their business.
- **Commercial Business Digital Newsletter:** Commercial businesses can sign up for a free energy efficiency newsletter delivered by email every month from the utility.
- **Hospitality Program:** CED offers hotels and motels an opportunity to register to have energy efficiency audits and direct installation of energy efficiency measures.

2.2.2.2 City of Colton Water and Wastewater Department

- **Residential Indoor Water Efficiency Rebate Program:** Colton Water Department (CWD) offers residential customers rebates for specific water efficiency home improvements inside their home. Rebates are provided for the following products: Toilets (Limit 3, Must be Water Sense Approved), Clothes Washer (Must be Energy Star Approved), Dishwasher (Must be Energy Star Approved), and Shower Heads (Limit 3, Must be Water Sense Approved).
- **Residential Outdoor Water Efficiency Rebate Program:** CWD offers residential customers rebates for specific water efficiency home improvements outside their home. Rebates are provided for the following products: Weather Based Irrigation Timer (Limit 1, Maximum Rebate of $150), HE Sprinkler Nozzles (Maximum Rebate $100, Must be Verifiable as High Efficient), Drought Tolerant Plants (Maximum Rebate $150, Must be Verifiable as Drought Tolerant), and Drip System Supplies (Maximum Rebate $150).
- **Residential Turf Removal Program:** CWD offers residential customers a financial incentive to remove their turf and replace it with a more drought tolerant landscape. Customers are given $2 per square foot of turf to be removed, with a maximum incentive of $800. Limit of 1 rebate per fiscal year.
- **Commercial Water Efficiency Rebate Programs:** CWD offers commercial as well as industrial and institutional customers the same rebates as residential customers, however the maximums allowed are considered on a case-by-case basis, depending on the type of rebate as well as the customer type. Greater consideration is given to these types of customers since they typically will be reducing their water use by a great amount than residential customers. They still must meet all the same requirements as the residential customers to be considered for the rebate programs.

2.2.2.3 West Valley Water District

- **High Efficiency Nozzle Rebate:** West Valley Water District (WVWD) provides rebates of $4.00 for spray nozzles that decrease the amount of overspray while increasing the amount applied to vegetation. The rebate for shut off nozzles are $10.
- **Weather Based Smart Irrigation Timers Rebate:** WVWD offers $100 rebates for approved weather based smart timers. Eligible smart times must include a weather sensor or have a weather sensor that is compatible with existing irrigation timer.
- **High Efficiency Washers Rebate:** WVWD provides $100 rebates for Energy Star qualified clothes washers that have a water factor of 6 (based on gallons per cycle/per cubic foot) and use at least 35% less water than conventional washers.
- **High Efficiency Toilet Rebate:** Toilets that have a low volume of 1.28 gallons per flush (gpf) or less can qualify for a $50 (maximum 2 per household) rebate. All toilets being replaced must be a 3.5 gpf or greater.
- **Turf Removal Rebate Program:** Customers who replace turf with water efficient landscaping is eligible to receive a $2 a square foot rebate at a maximum of $350. Pre-inspection and approval is required before eligibility is confirmed. All plant selection must be from the approved Inland Empire Garden

2.2.2.4 Southern California Edison Programs

- **Income Qualified Programs—Energy Management Assistance Program:** This program helps income-qualified households conserve energy and reduce their electricity costs. Southern California Edison (SCE) pays all the costs of purchasing and installing energy-efficient appliances and equipment, which are free to eligible customers.
- **Mobile Energy Unit:** The Mobile Energy Unit (MEU) promotes energy-efficiency solutions and energy management for both residential and business customers.
- **Energy Solutions:** SCE provides their customers with a home energy survey, residential energy guides, and energy saving tips.
- **Energy Management Solutions:** SCE provides its commercial customers with energy management solutions by industry sector in order to cut costs and greenhouse gas emissions.
- **Refrigerator & Freezer Recycling Program:** SCE hauls away old refrigerators and freezers for free and provides a $50 incentive to customers.
- **Home Energy Efficiency Survey:** SCE provides its residential customers a 15-minute survey and helps them find tips to maximize savings, and useful information about rebates that they can qualify for. The results are customized for each household.
- **Incentives For Home Energy Upgrades:** SCE provides home energy-efficiency product rebates on products such as compact fluorescent (CFL) and energy efficiency lighting, Energy Star® refrigerators, energy efficiency water heaters, Energy Star air conditioners, whole-house fans, and energy-efficient evaporative cooling systems.
- **Plug-In Electric Vehicle Survey & Checklist:** SCE provides a survey and checklist to help customers with electric vehicles set up their homes.
- **Renewables Standard Contract Program:** SCE provides a standardized procurement process (for renewable power generation projects not to exceed 20MW) that leads to quicker execution of the project, relative to other procurement processes.
- **New Solar Homes Partnership:** The New Solar Homes Partnership program, part of the California Solar Initiative, provides financial incentives and other support for installing eligible solar generating systems on new residential buildings—single family, income-eligible, and multifamily housing.
- **California Solar Initiative Thermal Program:** SCE offers incentive rebates for electric-displacing solar water heating systems in its service territory.
- **Multifamily Affordable Solar Housing:** This program is part of the California Solar Initiative. It offers incentives for installing eligible photovoltaic systems for qualifying multifamily affordable housing. It is designed to subsidize photovoltaic systems in multifamily housing, which will offset electricity loads and provide economic benefits for housing property owners and managers as well as building tenants.
- **Solar Training Classes:** Through the California Solar Initiative, SCE provides multiple solar training classes for homeowners, contractors, commercial entities, and thermal contractors.
- **Solar Rooftop Program:** SCE incurs photovoltaic installation costs and leases rooftop space from building owners in this solar rooftop program.

- **Self-Generation Incentive Program:** SCE customers with a demand of 30 kilowatts (kW) or more can receive a cash incentive from $0.60 to $4.50 per watt for installing qualifying electricity generating equipment under SCE's Self Generation Incentive Program.
- **Green Jobs Education Initiative:** The Green Jobs Education Initiative helps students pursue education in green jobs fields. SCE's commitment of $1 million provides grants of $100,000 each to ten California community colleges that offer green jobs training programs.

2.2.2.5 Southern California Gas Company Programs

- **Direct Assistance Program:** Southern California Gas Corporation (SCGC) offers no-cost energy-saving home improvements and furnace repair or replacement services for qualified limited-income renters and homeowners.
- **Conservation Tips:** SCGC provides useful tips for residential customers to conservation energy.
- **Instant Rebate Program:** Customers may receive instant rebates for energy efficient products.
- **Residential Rebates:** SCGC offers money-saving rebates on qualifying energy-efficient appliances or upgrades for residential customers. Qualified appliances include clothes washers, dishwashers, low-flow showerheads, furnaces, insulation, natural gas storage water heaters, and natural gas tankless water heaters.
- **Rebates for Property Managers:** The Multifamily Rebate Program offers rebates for the installation of qualified energy-efficient products in apartment dwelling units and common areas of apartments, condominium complexes, and mobile home parks.
- **Energy Efficiency Starter Kit:** The kit includes three faucet aerators and a low-flow showerhead to help save energy and water.
- **Home Energy Efficiency Survey:** Customers may save money and resources by taking a free Home Energy Efficiency Survey. When customers take the survey, they get customized gas, electricity, and water saving tips on the best ways to use appliances in their homes.
- **Financing for Energy Efficiency Upgrades:** Customers can qualify for $2,500 to $20,000 to purchase and install energy-efficient upgrades with the Home Energy Upgrade Financing program.
- **Comprehensive Mobile Home Program:** Qualifying mobile home customers are provided with no-cost energy conservation evaluations, installations of low-flow showerheads and faucet aerators, and gas energy-efficiency improvements, such as duct test and seal of heating/venting and air conditioning (HVAC) systems.
- **LivingWise® School Program:** This program combines classroom learning and home retrofit/audit projects completed by sixth grade students and their parents. It provides a LivingWise® Activity Kit for each customer.
- **Upstream High Efficiency Gas Water Heater Rebate Program:** This program offers rebates to distributors and wholesalers for high-efficiency gas water heaters to reduce or remove the price differential between these appliances and standard gas water heaters.
- **On-Demand Efficiency (Recirculation Loops for Central Domestic Hot Water Heaters):** This program installs on-demand intelligent pumps in central domestic hot water systems with recirculation loops in multifamily buildings to help reduce unnecessary natural gas consumption.

- **High Efficiency Hot Water Distribution Program (Solar):** This program helps customers install new solar pool heating systems to augment an existing gas pool heater. This program is for qualified apartment complexes that heat swimming pools throughout the year.
- **Multifamily Direct Installation Programs:** Qualifying owners and managers of multifamily buildings are provided with no-cost energy audits, products, and their installation. No-cost products include super low-flow energy-efficient showerheads, kitchen aerators, bathroom aerators, and pipe wrap for hot water distribution systems.
- **CoolGas Replacement Program:** This program provides incentives, based on calculated energy savings, for the replacement of smaller (50 tons or less), older, inefficient natural gas air conditioning systems with new energy-efficient units and quality installation procedures.
- **Domestic Hot Water Controls Project:** This program installs domestic hot water controller technology on the hot water systems in hotels and motels to reduce natural gas consumption by a minimum of 25 therms per hotel room, per year.
- **Energy Challenger:** This program offers business customers an interactive online assessment to develop practical energy-efficiency recommendations.
- **Home Energy Rating System (HERS) Rater Advanced Training Program:** This program will provide advanced training and education delivered both in the classroom and online. Training is for currently certified HERS raters and energy analysts involved in new construction.
- **Program for Resources Efficiency in Private Schools:** This program is to help private grade schools, colleges and universities, preschools, and trade and technical schools reduce energy use and energy costs. Program activities and services will include customer screening, comprehensive energy audit reports, rebates, bonuses, and installation support services.
- **Small Industrial Facility Upgrades:** The program is targeted at small industrial customers to deliver natural gas savings. Program offerings include, but are not limited to, improvements for heat recovery; process equipment replacement and equipment modernization; furnace and oven improvements and excess air reduction; onsite audits to identify energy savings opportunities; and design assistance to help customers understand the best ways to achieve energy savings.
- **Steam Trap and Compressed Air Survey:** This program will provide comprehensive compressed air and steam surveys and evaluations to small through large industrial customers. Survey activities carried out onsite will include a baseline of the customer's current energy consumption; field analysis of energy-consuming equipment; application of best practices; use of standard engineering protocols for design; identification of alternate methods of accomplishing the same task with less energy input; and methods to maintain quality, reliability, and safety of plant operations while achieving the energy-savings objectives.
- **Custom Language Efficiency Outreach (CLEO) Program:** This program promotes SCGC energy-efficiency programs and education/training to customers in SCGC's service territory who speak Chinese, Korean, Vietnamese, and Indian languages. The program will also address the needs of the African American community. Offerings include interactive workshops, community booths and energy surveys, and low-cost and no-cost recommendations.
- **Property Assessed Clean Energy (PACE) Energy Savings Project:** This program promotes energy-efficiency programs in the SCGC service area. The primary focus is ethnic minority communities (Vietnamese, Indian, Chinese, Korean, and Hispanic) for customers with historically low participation in SCGC energy-efficiency programs.

- **California Sustainability Alliance Program:** This program includes public and private organizations dedicated to increasing and accelerating adoption of sustainability best practices in the planning, design, construction, and operations of new and existing facilities and communities to increase efficient utilization of resources and develop self-sustaining community initiatives and capabilities.
- **Portfolio of the Future Program:** This program is designed to identify the market commercialization of emerging technologies that can improve energy efficiency and reduce reliance on natural gas supplies in the southern California market at a quick pace.
- **Vendor Participation Program:** Suppliers and installers of insulation, steam traps, boilers and other qualifying products can apply for rebates on behalf of their customers.
- **Seminars & Training at the Energy Resource Center:** SCGC teaches the latest in energy-efficient equipment and technologies. SCGC also sponsors seminars about energy-efficient equipment, kitchen ventilation, food safety, equipment maintenance, industry trends, and more.
- **Zero Percent On-Bill Financing:** Working in conjunction with rebate and incentive programs, SCGC offers qualified customers purchasing qualified natural gas equipment 0%, unsecured financing.
- **Energy Efficiency Benchmarking:** SCGC benchmarking allows building owners and managers to track and assess the energy performance of their buildings at no charge.

2.2.3 SANBAG's Long Range Transit Plan

SANBAG's *Long Range Transit Plan* (LRTP) (San Bernardino Associated Governments 2009) addresses San Bernardino County's current and future travel challenges, including addressing growing travel demand. The goal of the LRTP is to provide transit facilities and services to support this demand. The LRTP prioritizes goals and projects for transit growth and connects land use and transportation strategies. The draft LRTP considers four major alternatives to transit mobility, one of which will be designated the "final alternative." The LRTP identifies premium transit routes and station locations that helped to develop the SCS for areas in the County.

2.2.4 City of Colton

The City of Colton has a number of current initiatives that promote actions that help to limit and reduce GHG emissions:

- Electric vehicle and alternative fuel purchasing for fleet
- City facility electric vehicle infrastructure investment
- City facility energy efficiency retrofit initiative
- Modified work week schedule for city staff (4/10)
- Adopted an administrative procurement policy to purchase recycled products on January 25, 1994
- Adopted the CALGreen Building Code on January 1, 2014
- Adopted the Water Efficient Landscape Ordinance November 11, 2014

2.3 Basic Terms and Concepts

This section defines terms and explains basic concepts inherent to understanding GHG inventories and reductions, as well as the basics of climate change science. Important terms like *community inventory* and *business-as-usual* are defined below, along with a description of global warming and major greenhouse gases.

2.3.1 Basic Terms

Assembly Bill 32 (AB 32): The California Global Warming Solutions Act of 2006, widely known as AB 32, requires CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. The heart of the bill is the requirement that statewide GHG emissions must be reduced to 1990 levels by the year 2020 of the AB 32 Scoping Plan.

AB 32 Scoping Plan: The Scoping Plan for AB 32 was developed by CARB and approved in December 2008. The plan has a range of GHG reduction actions, which include direct regulations, compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. CARB has already adopted numerous regulations and rulemaking for reducing GHG emissions to achieve the emissions cap by 2020. In August 2011, the Scoping Plan was reapproved by the Board, and includes the Final Supplement to the Scoping Plan Functional Equivalent Document (FED). The Scoping Plan was updated in 2014 to track progress toward meeting the AB-32 target.

Business-as-Usual (BAU): BAU represents a future scenario that does not consider the possible reduction of GHG emissions that may result from any legislation or regulation that would go into effect after the baseline year. The BAU projections are estimates of future emissions based on energy and carbon intensity in the existing economy with the expected increases in population and economic growth in the future.

Community Inventory: The community inventory includes GHG emissions occurring in association with the land uses within the jurisdictional boundaries of the City's planning areas, and generally consists of emissions sources that the City can influence or control. The inventory includes emissions that occur both inside and outside the jurisdictional boundaries, but only to the extent that such emissions are due to land uses and activities within the City.

Emissions Type: GHG emissions can be defined as either direct (emissions that occur at the end use location, such as natural gas combustion for building heating) or indirect (emissions that result from consumption at the end use location but occur at another location, such as emissions that occur at the power plant itself but result from residential electricity use of in-home appliances or other uses). This report addresses both types of emissions. In this report, the term emission refers to GHG emissions and not to emissions of air quality pollutants.

Unit of Measure: The unit of measure used throughout this GHG inventory is $MTCO_2e$. Presenting inventories in CO_2 equivalence allows characterization of the complex mixture of GHG as a single unit taking into account that each gas has a different global warming potential (GWP). A million $MTCO_2e$ is abbreviated as $MMTCO_2e$.

2.3.2 Emissions Sectors Explained

GHG emissions and reductions presented in this document are done so in terms of "sectors." The term sector refers to the type of emissions or the type of activity that produces the emission. For example, the on-road transportation sector includes emissions from the cars and trucks driven on the region's roads and freeways. A brief description of each sector considered in this document follows in Table 2-1, with a list of the GHG reduction measures included in this CAP that work in that sector. Chapter 4 contains a glossary of all GHG reduction measures and Appendix B contains a detailed description of the methods used to calculate the associated GHG reductions.

Table 2-1. Emissions Sectors and Reduction Measures

Sector	How GHG emissions are avoided through State or Local measures in this CAP	Associated Reduction Measures
Building Energy Emissions result from the use of electricity and natural gas by residential and commercial buildings.	New construction built to a high energy-efficiency standard; retrofits to existing buildings to make them more energy efficient; changes in behavior or building management to be more efficient; and the increased use of renewable energy to power buildings.	State-1, State-2, State-3, State-4, State-5; Energy-7, Energy-8,; PS-1.
On-road Transportation Emissions result from the burning of gasoline and diesel fuel by light, medium and heavy duty vehicles that travel on the region's roads and freeways.	Increased fuel economy of all vehicles; reduced carbon content of the fuel; reduced vehicle miles traveled (increased use of alternative modes of transportation, carpooling, alternative work schedules and smart growth).	State-6, State-7, State-8; On-Road-2; PS-1.
Off-Road Transportation Emissions result from the burning of gasoline and diesel fuel by off-road equipment and vehicles.	Increased fuel economy of all vehicles and equipment; reduced carbon content of the fuel; idling limitations, and increased use of electric or alternatively fueled vehicles and equipment.	State-7;
Agriculture Emissions result from the application of fertilizer and the management of manure. Emissions also result from the burning of gasoline and diesel fuel by agricultural equipment, but these emissions are captured in the Off-Road equipment sector.	N/A	N/A

Sector	How GHG emissions are avoided through State or Local measures in this CAP	Associated Reduction Measures
Solid Waste Management Emissions result from the decay of garbage under the anaerobic conditions present in landfills. This sector captures both the waste that is generated by San Bernardino County residents in the inventory year and the waste that was historically generated by any person or business that has sent waste to a landfill located within San Bernardino County.	Waste reduction and increased methane capture at relevant landfills.	State-9; County-1; PS-1.
Wastewater Treatment Emissions result from the energy used to power plants and pump water and also from the chemical and biological breakdown of the waste.	Increased energy efficiency at wastewater treatment plants, water conservation and installation of biogas capture and gas to energy technologies.	Wastewater-3.
Water Conveyance Emissions result from the energy used to bring water from outside the jurisdiction to the border of a jurisdiction, including deliveries from the state water project or Colorado River.	More efficient water pumping equipment and both indoor and outdoor water conservation.	Water-3, Water-4; PS-1.

2.3.3 Climate Change and Global Warming

Climate change is a term used to describe large-scale shifts in existing (i.e., historically observed) patterns in earth's climate system. Although the climate has historically responded to natural drivers, recent climate change has been unequivocally linked to increasing concentrations of GHGs in earth's lower atmosphere and the rapid timescale on which these gases have accumulated (Intergovernmental Panel on Climate Change 2007a). The rapid loading of GHGs into the atmosphere is primarily due to the burning of fossil fuels since the industrial revolution.

Higher concentrations of heat-trapping GHGs in the atmosphere result in increasing global surface temperatures, a phenomenon commonly referred to as *global warming*. In absence of anthropogenic (i.e., manmade) emissions, GHGs play a critical role in maintaining the earth's temperature for successful habitation by humans and other forms of life.

Increases in fossil fuel combustion and deforestation have exponentially increased concentrations of GHGs in the atmosphere since the industrial revolution. Rising atmospheric concentrations of GHGs in excess of natural levels have increased global surface temperatures, which in turn result in changes to the earth's climate system. Warming of the earth's lower atmosphere induces large-scale changes in planetary systems, including ocean circulation patterns, precipitation patterns, global ice

cover, and biological distributions (Intergovernmental Panel on Climate Change 2007a, 2007b). Some of those changes would result in specific impacts at the state and local level.

The Intergovernmental Panel on Climate Change (IPCC) was established by the World Meteorological Organization and United Nations Environment Programme to assess scientific, technical, and socioeconomic information relevant to the understanding of climate change, its potential impacts, and options for adaptation and mitigation. The IPCC identifies the following compounds as key anthropogenic GHGs: CO_2, CH_4, N_2O, PFCs, SF_6, and HFCs (Intergovernmental Panel on Climate Change 2007a). Each is discussed in detail below.

To simplify reporting and analysis, methods have been established to describe emissions of GHGs in terms of a single gas. The most commonly accepted method to compare GHG emissions is the GWP methodology defined in IPCC reference documents (Intergovernmental Panel on Climate Change 1996, 2001:241–280). IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO_2e, which compares the gas in question to that of the same mass of CO_2 (CO_2 has a GWP of 1 by definition).

Table 2-2 lists the global warming potential of CO_2, CH_4, N_2O, PFCs, SF_6, and HFCs; their lifetimes; and abundances in the atmosphere.

Table 2-2. Lifetimes and Global Warming Potentials of Several Greenhouse Gases

Greenhouse Gases	Global Warming Potential (100 years)	Lifetime (years)	2005 Atmospheric Abundance
CO_2 (ppm)[a]	1	50–200	379
CH_4 (ppb)	21	9–15	1,774
N_2O (ppb)	310	120	319
CF_4 (ppt) [a]	6,500	50,000	74
C_2F_6 (ppt) [a]	9,200	10,000	2.9
SF_6 (ppt)	23,900	3,200	5.6
HFC-23 (ppt)	11,700	264	18
HFC-134a (ppt)	1,300	14.6	35
HFC-152a (ppt)	140	1.5	3.9

Sources: Intergovernmental Panel on Climate Change 1996, 2001:388–390.
Notes: ppm = parts per million
ppb = parts per billion
ppt = parts per trillion
[a] CF_4 and C_2F_6 are PFCs

2.3.4 Principal Greenhouse Gases

2.3.4.1 Carbon Dioxide

CO_2 is the most important anthropogenic GHG and accounts for more than 75% of all GHG emissions caused by humans. Its atmospheric lifetime of 50–200 years ensures that atmospheric concentrations of CO_2 will remain elevated for decades, even after mitigation efforts to reduce GHG concentrations are promulgated (Intergovernmental Panel on Climate Change 2007a). The primary

sources of anthropogenic CO_2 in the atmosphere include the burning of fossil fuels (including motor vehicles), gas flaring, cement production, and land use changes (e.g., deforestation, oxidation of elemental carbon). CO_2 can be removed from the atmosphere by photosynthetic organisms (e.g., plants and certain bacteria).

Atmospheric CO_2 has increased from a preindustrial concentration of 280 parts per billion (ppb) to 391 parts per million (ppm) in 2005 (Carbon Dioxide Information Analysis Center 2012).

2.3.4.2 Methane

CH_4, the main component of natural gas, is the second most abundant GHG and has a GWP of 21 (Intergovernmental Panel on Climate Change 1996). Sources of anthropogenic emissions of CH_4 include growing rice, raising cattle, using natural gas, landfill outgassing, and mining coal (National Oceanic and Atmospheric Administration 2005). Certain land uses also function as a both a source and sink for CH_4. For example, the primary terrestrial source of CH_4 are wetlands, whereas undisturbed, aerobic soils act as a CH_4 sink (i.e., they remove CH_4 from the atmosphere).

Atmospheric CH_4 has increased from a pre-industrial concentration of 715 ppb to 1,871 ppb in 2005 (Carbon Dioxide Information Analysis Center 2012).

2.3.4.3 Nitrous Oxide

N_2O is a powerful GHG, with a GWP of 310 (Intergovernmental Panel on Climate Change 1996). Anthropogenic sources of N_2O include agricultural processes (e.g., fertilizer application), nylon production, combustion of fossil fuel by power plants, nitric acid production, and vehicle emissions. N_2O also is used in rocket engines, racecars, and as an aerosol spray propellant. Natural processes, such as nitrification and denitrification, can also produce N_2O, which can be released to the atmosphere by diffusion. In the United States more than 70% of N_2O emissions are related to agricultural soil management practices, particularly fertilizer application.

N_2O concentrations in the atmosphere have increased 19%, to 319 ppb in 2008 from pre-industrial levels of 270ppb to 322 ppb (World Meteorological Association, 2008).

2.3.4.4 Perfluorinated Carbons

The most abundant PFCs are CF_4 (PFC-14) and C_2F_6 (PFC-116). These human-made chemicals are emitted largely from aluminum production and semiconductor manufacturing processes. PFCs are extremely stable compounds that are destroyed only by very high-energy ultraviolet rays, which results in very long lifetimes. They have high GWPs ranging from 6,500 for CF_4 to 9,200 for C_2F_6 (Intergovernmental Panel on Climate Change 1996)

2.3.4.5 Sulfur Hexafluoride

SF_6 is a human-made chemical used as an electrical insulating fluid for power distribution equipment, in the magnesium industry, semiconductor manufacturing, and also as a tracer chemical for the study of oceanic and atmospheric processes (U.S. Environmental Protection Agency 2006). In 2005, atmospheric concentrations of SF_6 were 7.4 parts per trillion (ppt) and steadily increasing (Carbon Dioxide Information Analysis Center 2012). SF_6 is the most powerful of all GHGs listed in IPCC studies, with a GWP of 23,900 (Intergovernmental Panel on Climate Change 1996).

2.3.4.6 Hydrofluorocarbons

HFCs are human-made chemicals used in commercial, industrial, and consumer products and have high GWPs ranging from 140 to 11,700 (U.S. Environmental Protection Agency 2006). HFCs are generally used as substitutes for ozone-depleting substances (ODS) in automobile air conditioners and refrigerants. As seen in Table 2-2, the most abundant HFCs, in descending order, are HFC-134a, HFC-23, and HFC-152a.

2.3.5 Greenhouse Gas Inventories and Emissions Sources

A GHG inventory is a quantification of all GHG emissions and sinks within a selected physical and/or economic boundary. GHG inventories can be performed on a large scale (i.e., for global and national entities) or on a small scale (i.e., for a particular building or person). Although many processes are difficult to evaluate, several agencies have developed tools to quantify emissions from certain sources.

The majority (83%) of GHG emissions in the United States result from burning fossil fuels. Fossil fuels are burned to create electricity, which powers homes, commercial buildings, and vehicles. Energy used to power buildings is the primary source of GHGs in California and the nation. Vehicle emissions are a close second, comprising approximately 30% of total national emissions and 37% of total statewide emissions (U.S. Environmental Protection Agency 2010; California Air Resources Board 2010). Other sources of GHG emissions include agriculture, land clearing, the landfilling of waste, refrigerants, and certain industrial processes.

Table 2-3 outlines the most recent global, national, and statewide GHG inventories to help contextualize the magnitude of San Bernardino County's GHG emissions.

Table 2-3. Global, National, State, and Local GHG Emissions Inventories

Emissions Inventory	CO_2e (metric tons)
2011 IPCC Global GHG Emissions Inventory	45,913,000,000
2012 EPA National GHG Emissions Inventory	6,526,000,000
2012 CARB State GHG Emissions Inventory	458,680,000

Sources: World Resources Institute 2014; U.S. Environmental Protection Agency 2014; California Air Resources Board 2014.

2.3.6 Impacts of Climate Change on Southern California

Increases in the globally averaged atmospheric concentration of GHGs would cause the lower atmosphere to warm, in turn inducing a myriad of changes to the global climate system. These large scale changes would have unique and potentially severe impacts in the western United States, California, and the region surrounding the county. Current research efforts coordinated through CARB, CEC, Cal-EPA, University of California (UC) system, and others are examining the specific changes to California's climate that would occur as the earth's surface warms.

Existing evidence indicates that climate change could impact the natural environment in the following ways, among others.

- Rising sea levels along the coastline.

- Extreme-heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent.
- An increase in the frequency, intensity, and duration of conditions that are conducive to forming air pollution, further exacerbating air quality issues.
- An increase in heat-related human deaths, infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality.
- Reduced water supplies (all end uses).
- Potential increase in the severity of winter storms, affecting peak stream flows and flooding.
- Changes in growing season conditions that could affect agriculture, causing variations in crop quality and yield.
- Changes in distribution of plant and wildlife species due to changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.
- Decreased Sierra snowpack and altered timing and amount of snowmelt; effects on California water supplies and water management including those serving southern California.
- Increased frequency and intensity of wildfires.

2.4 Relationship of Climate Action Plans to CEQA and Local General Plans

This section describes the general relationship of CAPs to CEQA and the local general plans, including legal requirements and evolving practice throughout California. Figure 2-2 illustrates these relationships.

As a discretionary action, prior to adoption of the GHG reduction plan by local cities, CEQA review is required. SANBAG has prepared an EIR that analyzes the physical impacts of the measures selected by the Partnership cities on the environment. This analysis will be used to complete CEQA compliance prior to consideration of adopting of the portions of the plan applicable to SANBAG and to each individual city.

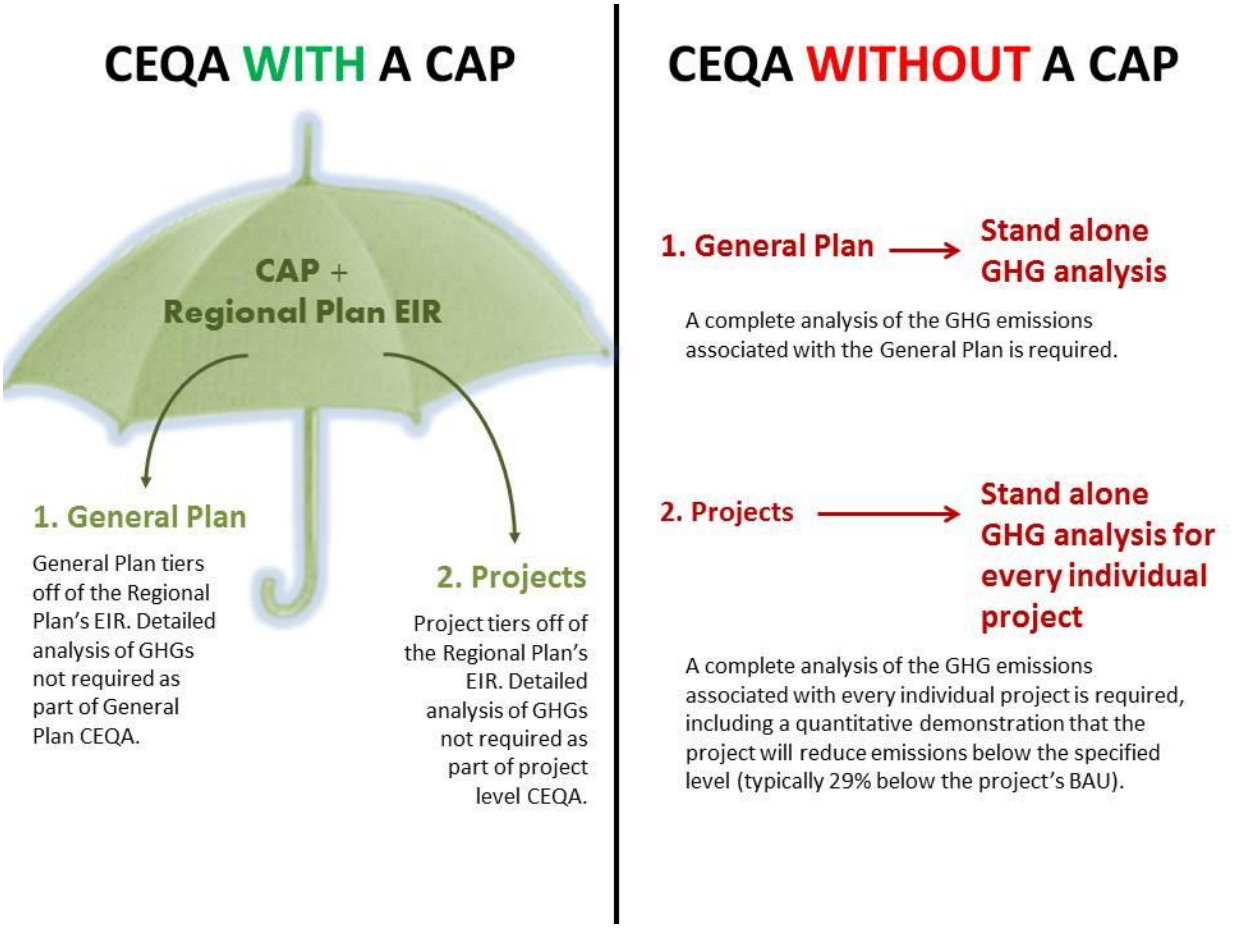
Amendments to the CEQA guidelines in March 2010 describe that CEQA project evaluation of GHG emissions can tier off a programmatic analysis of GHG emissions provided that the GHG analysis (or CAP) includes the following (CEQA Guidelines Section 15183.5).

- *Quantify greenhouse gas emissions*, both existing and projected over a specified time period, resulting from activities within a defined geographic area. This Plan has quantified all primary sectors of GHG emissions within each city for 2008 and 2020. Partnership cities may choose to adopt portions of this document as their individual CAP or build upon the information here to develop a more comprehensive CAP document.
- *Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by a CAP would not be cumulatively considerable.* This Plan includes the different proposed reduction targets of each of the Partnership cities. The collective measures proposed by the Partnership cities, in combination with state measures, would reduce emissions

by 16% below 2008 levels and by 27% below 2020 BAU levels, which are roughly consistent with the recommendations in the AB 32 Scoping Plan for municipalities to support the overall AB 32 reduction targets

- *Identify and analyze the GHG emissions* resulting from specific actions or categories of actions anticipated within the geographic area. This Plan analyzes community emissions for each Partnership city as a whole and includes predicted growth expected by 2020.
- *Specify measures or a group of measures, including performance standards* that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level. This Plan identifies both specific measures and project-level reduction standards (where selected by individual cities) to achieve the overall reduction target.
- *Monitor the plan's progress.* This Plan outlines general monitoring steps. Individual CAPs that utilize this Plan as a base would include locally-specific identification of monitoring actions..
- *Adopt the GHG Reduction Strategy in a public process following environmental review.* For each city that chooses to do so, a CAP would be adopted in a public process. The EIR prepared for this Plan can be used to support local city compliance with CEQA.

Figure 2-2. CAP, General Plans and CEQA


CEQA WITH A CAP
CAP +
Regional Plan EIR
1. General Plan
General Plan tiers off of the Regional Plan's EIR. Detailed analysis of GHGs not required as part of General Plan CEQA.
2. Projects
Project tiers off of the Regional Plan's EIR. Detailed analysis of GHGs not required as part of project level CEQA.
CEQA WITHOUT A CAP
1. General Plan
Stand alone GHG analysis
A complete analysis of the GHG emissions associated with the General Plan is required.
2. Projects
Stand alone GHG analysis for every individual project
A complete analysis of the GHG emissions associated with every individual project is required, including a quantitative demonstration that the project will reduce emissions below the specified level (typically 29% below the project's BAU).

Once adopted, subsequent project-level CEQA evaluations of greenhouse gas emissions can tier off of the adopted city CAP, provided that they are being fully implemented by the Partnership city where the project is located, and that the specific project is consistent with all applicable requirements from the relevant adopted city CAP.

The South Coast Air Quality Management District (SCAQMD) adopted an interim GHG significance threshold for stationary source projects where the SCAQMD is the lead agency. SCAQMD does not currently have GHG significance thresholds for development projects. SCAQMD encourages local governments to adopt a qualified GHG reduction strategy consistent with AB 32 goals and the new statewide CEQA guidelines described above. SCAQMD recommends that stationary source projects, consistent with an adopted qualified GHG reduction plan that meets the standards described in the CEQA guidelines, can be presumed to have no significant GHG emissions and do not need to be evaluated against SCAQMD's recommended mass emissions thresholds. For stationary source projects not consistent with an adopted qualified GHG reduction plan, if they exceed a screening significance threshold level of 10,000 $MTCO_2e$ of emissions per year, then the project must demonstrate design features and/or other measures to mitigate GHG emissions to the maximum extent feasible, or implement offsite mitigation (GHG reduction projects) to reduce GHG emission impacts to less than the proposed screening level. SCAQMD has draft thresholds for land use projects (residential and commercial development) that similarly allow for tiering off a qualified GHG reduction plan and use of numeric thresholds where a qualified plan has not been adopted.

As noted above, CEQA Guidelines Section 15183.5 establishes opportunities for tiering for qualified GHG reduction plans. Accordingly, emissions associated with projects that are consistent with the city-adopted GHG reduction plans can be considered less than significant and their contributions to cumulative emissions are not considered cumulatively considerable. Clearly, projects that are consistent with the city-adopted plans would still create emissions; however, they can be approved knowing that overall emissions projected to occur in 2020 would be less than the emissions that would occur in 2020 under BAU. This determination only relies on an individual city's actions relative to its GHG emissions. Provided that a project is within a jurisdiction with a qualified GHG reduction plan that is being implemented in full, tiering can be used. If some of the Partnership cities choose not to adopt CAPs or choose to adopt different targets or measures than described in this Plan, this would not affect the ability of other cities to tier their project analysis from their adopted plans, provided the plans are being implemented.

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Chapter 3
Reduction Profile

3.1 Introduction

This chapter presents the GHG inventory, 2020 BAU forecast, and GHG emission reductions for the city of Colton. The following information is presented in this chapter.

For each Partnership city, the following items are provided.

1. **City Summary**—Presents background information for each city, such as its location, socioeconomics, and key points of interest. Demographic information consistent with the 2010 U.S. Census is summarized. An overview of the city's emissions and selected reduction measures is also provided.
2. **Emission Reductions Graphics**—Three graphics are presented here: 1) a bar chart showing the city's 2008 inventory, state/county reductions, local reductions, and unmitigated emissions in 2020, along with the 2020 emissions goal identified by each city; 2) a bar chart showing the 2020 BAU emissions by sector and the 2020 emissions with full implementation of the Plan; and 3) pie charts showing reductions by controlling entity and by sector.
3. **Emissions and Reductions Table**—This table presents the same information as shown in the graphics, including the city's 2008 inventory, 2020 BAU forecast, and reductions by sector.
4. **Reduction Measures Table**—This table presents all reduction measures considered by the city for this CAP, along with GHG reductions and simple descriptions of each measure.
5. **Relevant General Plan Policies**—A summary of general plan policies that are relevant to avoiding or reducing GHG emissions in general, or support specific reduction measures in the Plan. General Plan policies are listed in reference to the specific GHG reduction measures they support. Refer to Chapter 1 for an explanation of the main goal of each reduction category and to Chapter 4 for a definition of each individual reduction measure listed.

The city has selected set of measures independently of other participating cities' selections within the San Bernardino County Regional GHG Reduction Plan. Selections include both the measure itself and the participation rate associated with each measure. The measure selections were based on the City's best judgment about what is feasible for Colton, and depend on the specific emissions source profile (i.e. inventory) and the anticipated growth within the city.

3.2 City of Colton Profile

3.2.1 City Summary

The City of Colton is located in the valley region of San Bernardino County, west of City of San Bernardino and north of the City of Riverside. Colton was incorporated in July of 1887, making it one of the oldest cities in the county. The city owes much of its historical growth to its location along a

main artery of the Union Pacific Railroad (UPRR) transcontinental rail line, constructed in 1875, and the Burlington Northern Santa Fe Rail line which was later constructed.

Colton covers approximately 16 square miles. The population in Colton as of the 2010 census was 52,154 and is expected to grow to 60,652 by 2020 (16% increase). Colton's demographic composition in 2010 was 71% Persons of Hispanic or Latino origin (of any race); 13% White, non-Hispanic; 4.7% Asian, 2.4% from other races. Colton also has a largely young population (32% under 18, compared to 25% for California) (U.S. Census Bureau 2012). Major regional employers in Colton include Arrowhead Regional Medical Center, the Colton school district and the Ashley Furniture joint factory and retail outlet. Employment is expected to grow by 6% before 2020. Colton's location in the southern area of the county and its proximity to freeways have made it, like other valley cities, a desirable and fast-growing community in recent decades.

Table 3-1 presents socioeconomic data for Colton, including population, housing (single-family and multifamily), and employment (agricultural, industrial, retail, and nonretail) (Southern California Association of Governments 2012).

Table 3-1. Socioeconomic Data for Colton

Category	2008	2020
Population	52,103	60,652
Housing	14,955	17,842
Single-Family	*9,024*	*10,771*
Multi-Family	*5,931*	*7,071*
Employment	24,023	25,529
Agricultural	*5*	*13*
Industrial	*3,962*	*4,504*
Retail	*4,463*	*4,599*
Non-Retail	*15,593*	*16,412*

3.2.2 Emission Reductions

The City of Colton selected a goal to reduce its community GHG emissions to a level that is 15% below its 2008 GHG emissions level by 2020. The City will exceed this goal through a combination of state (~84%) and local (~16%) efforts. The City actually exceeds the goal with only state/county level actions (131% of goal), but has committed to several additional local measures. The Pavley vehicle standards, the state's low carbon fuel standard, the RPS, and other state measures will significantly reduce GHG emissions in Colton's on-road and building energy sectors in 2020. An additional reduction of 40,853 $MTCO_2e$ will be achieved primarily through the following local measures, in order of importance: Implement SB X7-7 (Water-4); Energy Efficiency for Existing Buildings (Energy-1); and GHG Performance Standard for Existing Development (PS-1). Colton's Plan has the greatest impacts on GHG emissions in the solid waste management, wastewater treatment, and building energy sectors.

The City of Colton has recently updated its General Plan Circulation (Mobility) Element and Land Use Element. The updated General Plan Elements contain many transportation and land use-related policies and actions to reduce vehicle-related GHG emissions throughout the SANBAG region. These

Elements will support the goals of SB 375 and the Sustainable Communities Strategy (Transporation-1) through a wide range of policies and actions, which include the following.

Mobility

- Require all new non-residential, mixed-use, and large-scale residential development projects, through the development review process, to include public transit, bicycle, and pedestrian facilities.
- Plan for multi-use recreation trails and paths that allow for physical activities, including running, walking, and bicycling.
- Minimize vehicle emissions by encouraging land use patterns and multi-modal transportation improvements that reduce the need for automobile trips by making biking, walking, and the use of public transit for short trips more convenient and available.
- Work with Omnitrans to increase the use of public transit, establish or modify routes, and improve connectivity to regional services that respond to the needs of the Colton community.
- Work with Metrolink and the Southern California Regional Rail Authority to establish a Metrolink station in Colton along existing Metrolink rail lines.
- Develop and maintain a citywide comprehensive bicycle network of off-street bike paths, on-street bike lanes, and bike streets to provide connections between neighborhoods, schools, civic center/facilities, recreational facilities, and major commercial centers.
- Condition discretionary projects to require bicycle amenities such as bike racks and secure storage areas.
- Require new developments of more than 100 employees (per building or per tenant/company) to develop Transportation Demand Management programs to minimize automobile trips and to encourage transit, ridesharing, bicycling and walking.
- Allow for joint use and the sharing of parking facilities in mixed-use developments and for other projects which demonstrate the benefits of alternative parking approaches.

Land Use

The Land Use Element has introduced two new land use designations that will support the goals of SB 375, and help reduce GHG emissions. The goal of these new land use designations/zoning districts is to "establish land use patterns and provide pedestrian amenities…that minimize the need for vehicle travel among the uses within a district" (Policy LU-10.4)

- Mixed-Use: Downtown—Provides for a downtown district that integrates civic, public, commercial, office and residential uses.
- Mixed-Use: Neighborhood—Allows for office, commercial, and residential uses within the same structure or adjacent to each other, including live/work units.

The Land Use Element has also introduced a "Residential Overlay" designation that provides, in addition to the base land use, the opportunity to develop residential uses in areas where convenient access to transit and neighborhood-serving land uses is available.

In addition, the Land Use Element has introduced the following policies that support the goals of SB 375 and the Sustainable Communities Strategy.

- Establish land use patterns that provide pedestrian amenities within the mixed-use districts that minimize the need for vehicle travel among the uses within a district.
- Require that new development projects reflect the principles of Traditional Neighborhood Development: walkable street patterns, pedestrian amenities, access to transit, a mix of complementary uses, comfortable and accessible open spaces, a range of housing types and densities, and quality design.
- Facilitate the use of green building standards and Leadership in Energy and Environmental Design (LEED) or similar programs in both private and public projects to conserve natural resources.
- Promote sustainable building practices that go beyond the requirements of Title 24 of the California Administrative Code, and encourage energy-efficient design elements, as appropriate.
- Support sustainable building practices that integrate building materials and methods that promote environmental quality, economic vitality, and social benefit through design, construction, and operation of the build environment.
- Pursue opportunities to locate higher-density residential development near activity centers such as parks and recreation facilities, commercial areas, employment centers, and transit.

The bars in Figure 3-13 show Colton's 2008 GHG emissions total, 2020 BAU emissions forecast total, and the total emissions remaining after meeting the city's emissions reduction target (i.e., 15% below the 2008 emissions level). The contribution of state/county and local reductions are overlaid on the 2020 BAU emissions forecast total ("2020 Plan"), representing the total emissions reductions achieved in 2020. As stated above, state/county reductions account for the majority (~85%) of the total reductions needed to achieve the 2020 target.

Figure 3-14 presents emissions by sector, for both the 2020 BAU and the 2020 reduction or "Plan" scenarios. The largest emissions contributions are in the on-road transportation, building energy, and off-road equipment emissions sectors.

Table 3-14 summarizes the 2008 inventory, 2020 BAU forecast, and GHG reduction ("Plan") results by sector. It shows the percent reduction in each sector's emissions in 2020 and demonstrates that Colton exceeds its emissions reduction goal. Emissions sectors with the greatest percent reduction include the solid waste management, wastewater treatment, and building energy sectors.

Figure 3-15 presents emission reductions by sector and by control (i.e., state/county control versus local or city control). As stated previously, the majority of emissions reductions are due to state/county measures. Of the state/county measures, the majority of reductions are in the building energy and on-road transportation sectors. Of the local measures, the majority of reductions are in the building energy sector due to the implementation of SB X7-7 (Water-4).

Figure 3-1. Emissions Reduction Profile for Colton

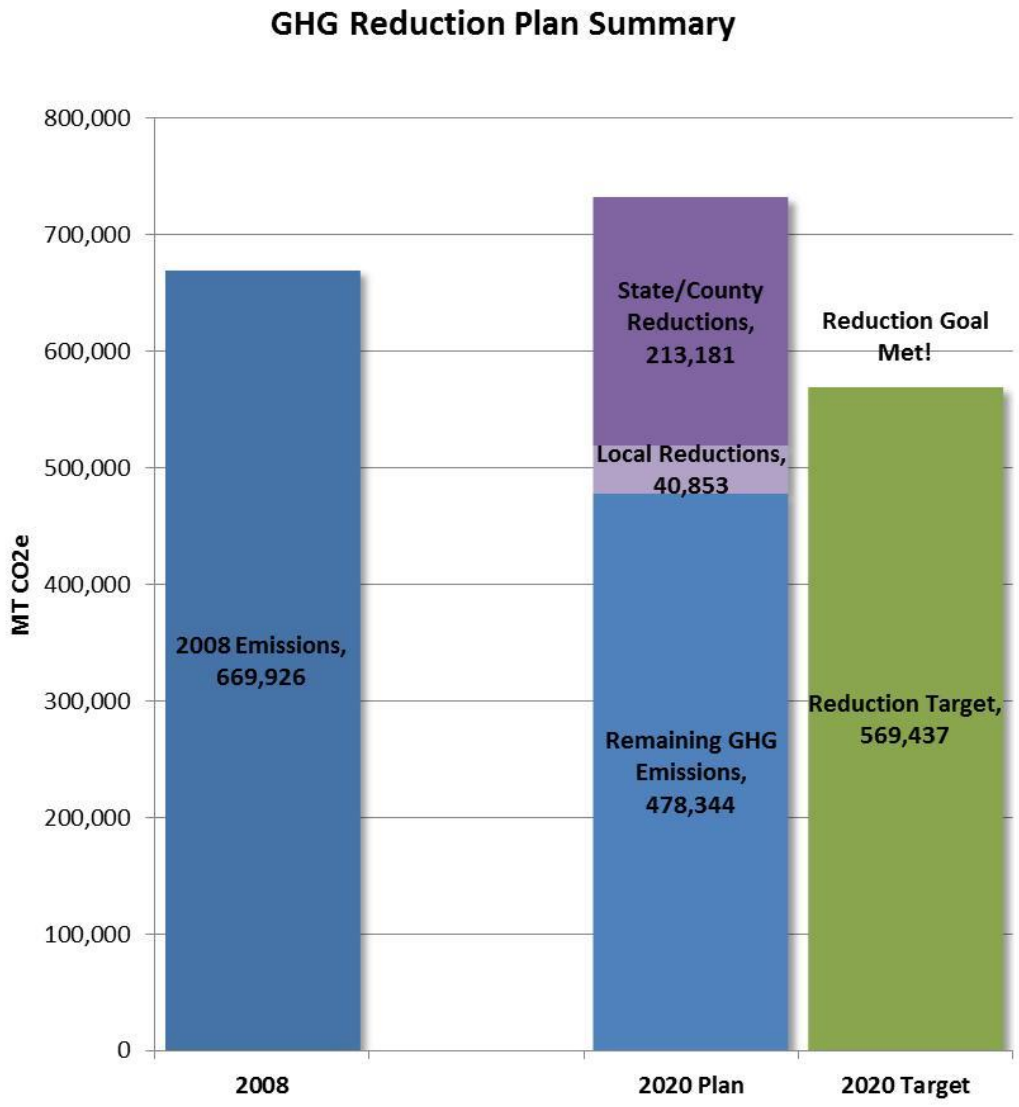


Figure 3-2. Emissions by Sector for Colton

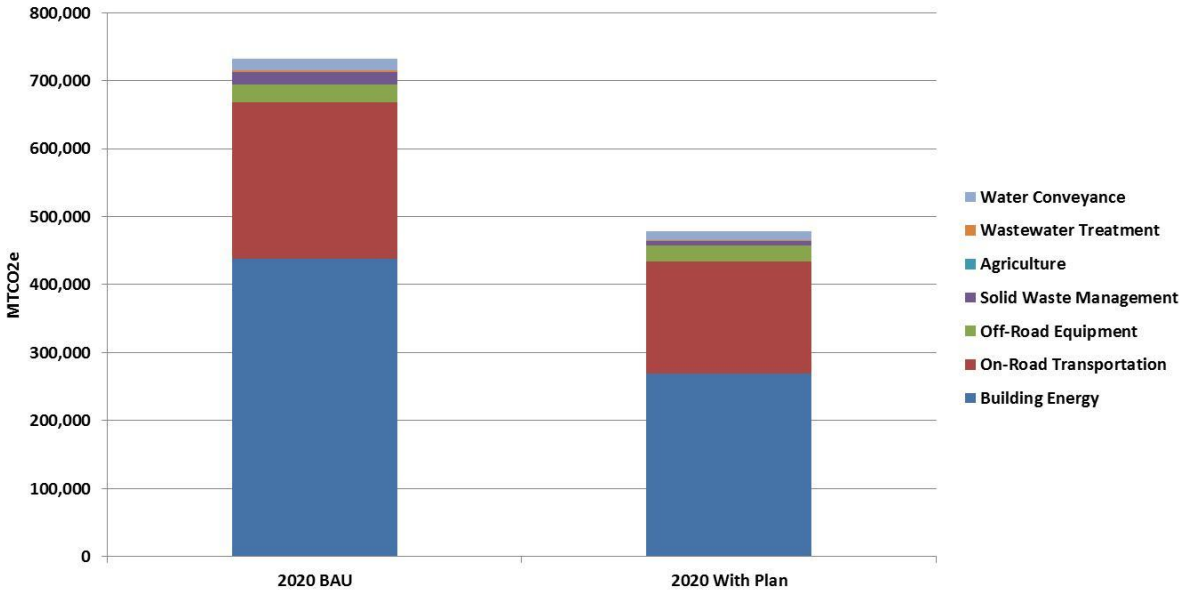
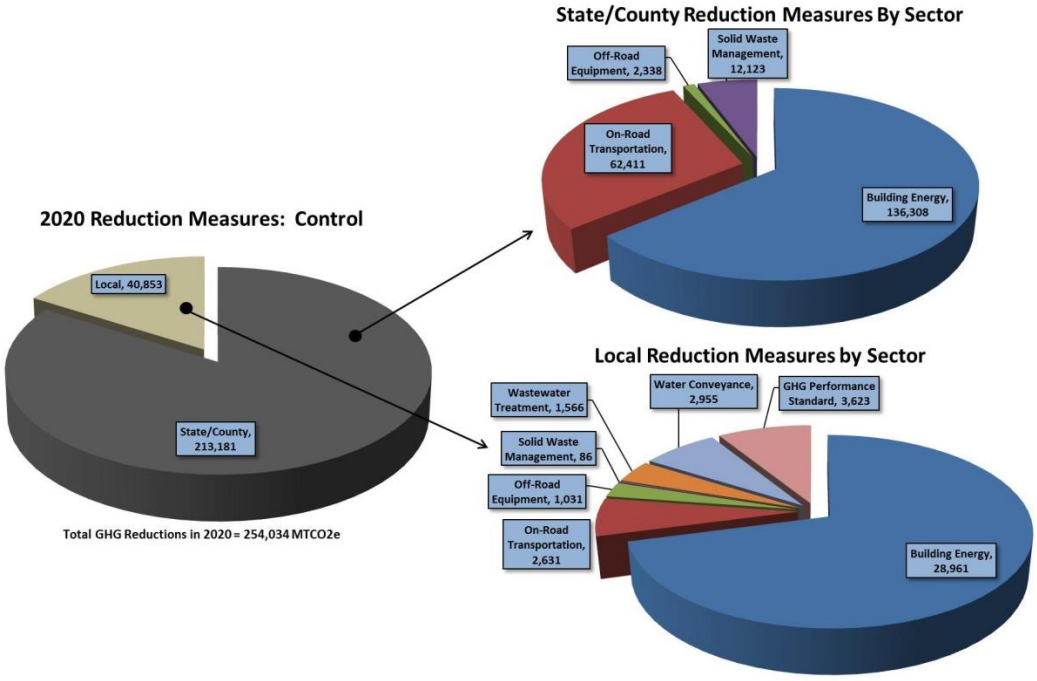


Table 3-2. Emission Reductions by Sector for Colton

Sector	2008	2020 BAU	Reductions	2020 Emissions with Plan	% Reduction
Building Energy	410,302	437,695	165,269	272,426	37.8%
On-Road Transportation	215,836	230,059	65,043	165,017	28.3%
Off-Road Equipment	22,891	26,167	3,368	22,799	12.9%
Solid Waste Management	18,037	18,826	12,209	6,616	64.9%
Agriculture	731	373	0	373	0.0%
Wastewater Treatment	2,128	2,519	1,566	953	62.2%
Water Conveyance	12,492	16,739	2,955	13,783	17.7%
GHG Performance Standard*	-	-	3,623	-	-
Total Emissions	682,418	732,377	254,034	478,344	34.7%
Reduction Goal	-	-	*162,940*	*569,437*	*22.2%*
Goal Met?	-	-	*Yes*	*Yes*	*Yes*
Reductions Beyond Goal	-	-	*98,684*	-	-
Per-Capita Emissions	13.1	12.1	-	7.9	-
Per-Job Emissions	28.4	28.7	-	18.7	-
Excluded Emissions: Stationary Sources	*55,509*	*60,605*	-	-	-

Notes:
Values may not sum due to rounding.
* The GHG Performance Standard for New Development is not a sector of the inventory, but it contributes toward the City's reduction goal. Please see Chapter 4 for a complete description of this measure.

Figure 3-3. Emission Reductions by Control and by Sector for Colton



3.2.3 Reduction Measures

Table 3-15 presents each reduction measure evaluated for Colton. For each measure, the short title and estimated GHG reductions in 2020 are listed. Measures are organized by state/county control and local control and listed by sector.

Table 3-3. GHG Reduction Measures and Estimated 2020 Reductions for Colton

Measure Number[a]	Measure Description	Reductions
State/County Measures		
State-1	Renewable Portfolio Standard	105,399
State-2	Title 24 (Energy Efficiency Standards)	8,927
State-3	AB 1109	20,627
State-4	Solar Water Heating	180
State-5	Industrial Boiler Efficiency	1,175
State-6	Pavley plus LCFS	57,313
State-7	AB 32 Transportation Reduction Strategies	5,098
State-8	LCFS: Off-Road	2,338
State-9	AB 32 Methane Capture	0
County-1	San Bernardino County GHG Plan Landfill Controls	12,123
Local Measures		
Building Energy		
Energy-1	Energy Efficiency for Existing Buildings	6,966

Measure Number[a]	Measure Description	Reductions
Energy-2	Outdoor Lighting	1,251
Energy-4	Solar Installation for New Housing	1,766
Energy-8	Solar Installation for Existing Commercial / Industrial	2,101
LandUse-1 (BE)	*Tree Planting Programs*	52
Wastewater-2 (BE)	*Equipment Upgrades*	1,389
Water-1 (BE)	*Require Tier 1 Voluntary CALGreen Standards for New Construction*	672
Water-4 (BE)	*SB X7-7*	14,765
On-Road Transportation		
Transportation-1	Sustainable Communities Strategy	2,195
Transportation-2	Smart Bus Technologies	436
Off-Road Equipment		
OffRoad-1	Electric-Powered Construction Equipment	713
OffRoad-2	Idling Ordinance	256
OffRoad-3	Electric Landscaping Equipment	63
Solid Waste Management		
Waste-2	Waste Diversion	86
Wastewater Treatment		
Wastewater-1	Methane Recovery	1,495
*Water-1 (WT)**	*Require Tier 1 Voluntary CALGreen Standards for New Construction*	7
Water-4 (WT)	*SB X7-7*	64
Water Conveyance		
Water-1	Require Tier 1 Voluntary CALGreen Standards for New Construction	644
Water-3	Water-Efficient Landscaping Practices	438
Water-4	SB X7-7	1,874
GHG Performance Standard for New Development		
PS-1	GHG Performance Standard for New Development	3,623
Total Reductions		254,034

Notes:

Values may not sum due to rounding.

Measures in italics result in GHG reductions in multiple sectors. For example, Water-1 reduces the amount of water consumed in the city, which reduces emissions for conveying that water (water conveyance sector), the energy needed to heat that water (building energy sector), and the energy required to treat the associated wastewater (wastewater treatment sector). The abbreviations are: BE = Building Energy; WT = Wastewater Treatment; WC = Water Conveyance.

3.2.4 Relevant General Plan Policies

This section summarizes key general plan policies that either support the City of Colton's GHG reduction measures (under 3.2.4.1.) or would otherwise contribute to GHG reductions and/or sustainable practices in the city (under 3.2.4.2.)

3.2.4.1 General Plan Policies Support GHG Reduction Measures

Polices listed below are from elements of Colton General Plan adopted in 1987, or the Regional Air Quality Element adopted in 1992.

Energy

- **Air Quality GOAL 6:** Reduced emissions through reduced energy consumption.

On-Road Transportation-1. Sustainable Communities Strategy

- **Air Quality Policy 2.1.2:** Use incentives, regulations and Transportation Demand Management in cooperation with other jurisdictions in the South Coast Air Basin to reduce the vehicle miles traveled for auto trips which still need to be made.
- **Air Quality Policy 2.3.1:** Cooperate in efforts to expand bus, rail and other forms of transit in the portion of the South Coast Air Basin within San Bernardino.
- **Air Quality Policy 2.3.2:** Promote expansion of all forms of transit in the urbanized portions of San Bernardino, Orange, Los Angeles and Riverside Counties.
- **Air Quality Goal 4:** A pattern of land uses which can be efficiently served by a diversified transportation system and land development projects which directly and indirectly generate the minimum feasible air pollutants (17).
- **Air Quality Policy 4.2:** Improve the balance between jobs and housing in order to create a more efficient urban form.
- **Air Quality Program 4.2.2:** Improve jobs/housing balance at a subregional level in relation to major activity centers as new development occurs by: Allowing/encouraging intensified development around transit nodes and along transit corridors.

On Road Transportation-2. Smart Bus Technologies

- **Air Quality Program 2.3.2.2:** Support public transit providers in efforts to increase funding for transit improvements to supplement other means of travel.

Off-Road-1. Electric-Powered Construction Equipment

- **Air Quality GOAL 6:** Reduced emissions through reduced energy consumption.

Off-Road-2. Idling Ordinance

- **Air Quality GOAL 6:** Reduced emissions through reduced energy consumption.

Off-Road-3. Electric Landscaping Equipment

- **Air Quality GOAL 6:** Reduced emissions through reduced energy consumption.

Solid Waste Management

Waste-2. Waste Diversion

- **Air Quality Program 6.3.1**: Implement provisions of AB 939 and adopt incentives, regulations and procedures to specify local recycling requirements (18.b).

Wastewater Treatment

Wastewater-1. Methane Recovery

- **Air Quality GOAL 6:** Reduced emissions through reduced energy consumption.

Wastewater-2. Equipment Upgrades

- **Air Quality GOAL 6:** Reduced emissions through reduced energy consumption.

Water Conveyance

Water-3. Water-Efficient Landscaping Practices

- **Open Space & Conservation Element Standard 3**: The use of natural and drought-tolerant vegetation shall be encouraged for landscaping in order that maintenance and water consumption are minimized.

3.2.4.2 General Plan Policies that Contribute to GHG Reduction and/or Sustainable Practices

Policies listed below are from elements of the Colton General Plan adopted on August 2013 (Land Use/Mobility) and February 2014 (Housing).

Land Use Element

Goal LU-4. Incorporate green building and other sustainable building practices into development projects.

- **Policy LU-4.1:** Require that new development projects reflect the principles of Traditional Neighborhood Development: walkable street patterns, pedestrian amenities, access to transit, a mix of complementary uses, comfortable and accessible open spaces, a range of housing types and densities, and quality design.

- **Policy LU-4.2:** Facilitate the use of green building standards and Leadership in Energy and Environmental Design (LEED) or similar programs in both private and public projects.

- **Policy LU-4.3:** Promote sustainable building practices that go beyond the requirement of Title 24 of the California Administrative Code, and encourage energy-efficient design elements.

- **Policy LU-4.4:** Support sustainable building practices that integrate building materials and methods that promote environmental quality, economic vitality, and social benefit through the design, construction, and operation of the built environment.

- **Policy LU-4.5:** Promote adoptive reuse of existing buildings as an alternative to new construction.

- **Policy LU-4.6:** Require that land divisions and development projects incorporate designs and practices that respect natural site features and provide for groundwater recharge.

Goal LU-5: Reduce use of energy resources citywide, with a key goal of reducing the City's carbon footprint.

- **Policy LU-5.1:** Require the incorporation of energy conservation features into the design of all new construction and site development, as required by State law and local regulations.

- **Policy LU-5.2:** Provide incentives, as funding opportunities become available, for the installation of energy conservation features in existing multi-family residential and commercial developments, including technical assistance and possible low interest loans.

- **Policy LU-5.3:** Educate the public using a variety of outreach channels regarding the need for energy conservation, techniques which can be employed, and systems which are available.

- **Policy LU-5.4** Support the ongoing efforts of the California Air Resources Board to implement AB32 and SB375, and fully follow any new AB32 and SB375-related regulations.

- **Policy LU-5.5:** Develop and implement greenhouse gas emissions reduction measures, including discrete, early-action greenhouse gas reducing measures that are technologically feasible and cost effective.

- **Policy LU-5.6:** Require detailed air quality and climate change analyses for all applications that have the potential to adversely affect air quality, and incorporate the analyses into applicable CEQA documents. Projects with the potential to generate significant levels of air pollutants and greenhouse gases, such as manufacturing facilities and site development operations, shall be required to incorporate mitigation into their design and operation, and to utilize the most advanced technological methods feasible.

- **Policy LU-5.7:** Work with the South Coast Air Quality Management District and the Southern California Association of Governments to implement the *Air Quality Management Plan* (AQMP) and *Regional Transportation Plan/Sustainable Communities Strategy,* with the objective of meeting federal and state air quality standards for all pollutants. To ensure that new measures can be practically enforced in the region, participate in future amendments and updates of the AQMP.

Goal LU-10: Create new mixed-use, walkable districts that are great places to live and exciting destinations.

- **Policy LU-10.1:** Implement the land use policies for Downtown Colton set forth in this Land Use Element via a Specific Plan or similar document, and actively seek out developers to build in the Downtown consistent with City objectives.

- **Policy LU-10.2:** Adopt a new Neighborhood Mixed-Use zone.
- **Policy LU-10.3:** Implement the West Valley Specific Plan.
- **Policy LU-10.4:** Establish land use patterns and provide pedestrian amenities within the mixed-use districts that minimize the need for vehicle travel among the uses within a district.

Goal LU-16: Create an attractive, diverse mixed-use district along La Cadena Drive.

- **Policy LU-16.8:** Link projects and downtown with public transit and/or trails (bus rapid transit, bike lanes, etc.).

Mobility Element

Goal M-2: Provide a transportation system that includes connected transit, bicycle, and pedestrian networks.

Housing Element

Goal H-7: Promote and encourage sustainable development and green building practices for all new residential development and for the retrofitting of existing housing.

- **Policy H-7.1** Promote higher density residential development and mixed-use in Downtown Colton and along and major transit corridors.
- **Policy H-7.2** Encourage water- and energy-efficient appliances and features for new residential development and encourage water- and energy-efficient retrofitting improvements for existing residential homes.
- **Policy H-7.3** Provide incentives to promote weatherization, double-paned windows, and insulation for older homes.
- **Policy H-7.4** Provide initiatives to increase the use of solar energy and utilize passive solar design to increase energy conservation.

Chapter 4
Reduction Measures

4.1 Introduction

This section contains a detailed description of all reduction measures discussed in the CAP. Measures are organized below into state, county, and local categories. For local measures, the following sectors are included: building energy, on-road transportation, off-road equipment, agriculture, land use and urban design, solid waste management, wastewater, and water conveyance. An overview of each sector, including a summary of each sector's results, its relative importance (compared to other sectors), and major opportunities for reductions, is also provided.

For each measure, the following information is provided.

Measure Description: A description of the measure.

Entity Responsible for Implementation: The entity that would be implementing the measure.

Measure Implementation Details: More information on how and when the measure would be implemented, including actions, programs and funding sources.

Level of Commitment: The assumed level of commitment for each measure.

Co-Benefits: Possible co-benefits of each measure are included.

GHG Reductions are shown in Table 4-1 for all measures for the total reductions, number of cities participating, and percent contribution to total state or local GHG reductions achieved for the region as a whole based on the reductions for the cities that selected each measure. Cities differed in which measures they chose; all cities did not select all measures. Thus, the level of participation in each measure differs from city to city. All cities benefitted from state measures. Most cities benefitted from regional measures although some cities do not benefit from the regional measures due to their location.

The full methods for the reduction measure calculations are included in Appendix B to the Greenhouse Gas Reduction Plan. The measures selected by each Partnership city and the reductions potential for each city are presented in Chapter 3.

4.2 State Measures

Actions undertaken by the state would contribute to GHG reductions in each Partnership city. For example, the state requires electric utility companies to increase their procurement of renewable resources by 2020. Renewable resources, such as wind and solar power, produce the same amount of energy as coal and other traditional sources, but do not emit any GHGs. By generating a greater amount of energy through renewable resources, electricity provided to each city would be cleaner and less GHG intensive than if the state hadn't required the renewable standard. Even though state measures do not always require local government action, emissions reductions achieved by this and other state measures would help lower GHG emissions in each city. This Plan includes ten statewide

initiatives that would contribute to GHG reductions in each city. The majority of these programs would improve building energy efficiency and renewable energy generation. Specifically, Title 24 energy efficiency standards for new residential and nonresidential buildings would require building shells and components be designed to conserve energy and water. Similarly, energy efficiency strategies required by AB 1109 would reduce electricity consumption lighting. Finally, the state's RPS would increase the amount of electricity generated by renewable resources.

Over the past several decades, California has become a leader in establishing initiatives to reduce fuel consumption and on-road vehicle emissions and this continues in combination with federal efforts on the CAFE standards. CARB has also adopted the LCFS, which requires a 10% reduction in the carbon intensity of California's transportation fuels by 2020 and outlined several efficiency measures in the AB 32 Scoping Plan. Together, these measures would reduce light- and heavy-duty vehicle emissions.

A complete list of state programs included in the Plan, as well as anticipated GHG reductions, is presented in this chapter. Appendix B provides more description of each state measure.

4.2.1 State-1: Senate Bill 1078 (2002)/Senate Bill 107 (2006) and Senate Bill 2 (2011) Renewable Portfolio Standard

Measure Description: Obligates IOUs, ESPs, and CCAs to procure an additional 1% of retail sales per year from eligible renewable sources until 20% is reached, no later than 2010 and sets forth a longer-range target of procuring 33% of retail sales by 2020.

Entity Responsible for Implementation: IOUs, ESPs, and CCAs are responsible for implementing this measure.

Measure Implementation Details: The responsible entities will procure incremental amounts of retail sales each year from renewable sources. By 2020, 33% of retail sales will be procured from renewable sources.

Co-Benefits: Reduced air pollution, waste reduction, energy diversity and security, reduced price volatility, economic development, and public health improvements.

4.2.2 State-2: Title 24 Standards for Non-Residential and Residential Buildings (Energy Efficiency Standards and CALGreen)

Measure Description: Requires that building shells and building components be designed to conserve energy and water. Mandatory and voluntary measures became effective on January 1, 2011, and the guidelines will be periodically updated. Local governments are responsible for adoption and enforcement of the standards. The next energy efficiency update of standards are in 2014 and the CEC intends to update them approximately every 3 years in future years. Note: In some instances, implementation of the CALGreen *voluntary* measures has been identified by local cities as part of their selected local measures.

Entity Responsible for Implementation: Local governments are responsible for implementation and enforcement of the standards.

Measure Implementation Details: This measure would be implemented in the Partnership cities gradually as new homes are built.

Co-Benefits: Reduced energy use, reduced air pollution, resource conservation, increased property value, public health improvements, and increased quality of life.

4.2.3 State-3: AB 1109 (Huffman) Lighting Efficiency and Toxics Reduction Act

Measure Description: Structured to reduce statewide electricity consumption in the following ways: 1) At least 50% reduction from 2007 levels for indoor residential lighting, and 2) At least 25% reduction from 2007 levels for indoor commercial and outdoor lighting, by 2018.

Entity Responsible for Implementation: The State of California is responsible for implementing this measure.

Measure Implementation Details: By 2018, reductions of 50% and 25%, compared to 2007 levels would be achieved.

Co-Benefits: Reduced energy use, reduced air pollution, increased property values, and increased quality of life.

4.2.4 State-4: AB 1470 (Huffman) Solar Water Heating

Measure Description: Creates a $25 million per year, 10-year incentive program to encourage the installation of solar water heating systems that offset natural gas use in homes and businesses throughout the state.

Entity Responsible for Implementation: The State of California is responsible for implementing this measure.

Measure Implementation Details: This measure would be implemented gradually as residents replace their heaters with solar water heating systems.

Co-Benefits: Reduced energy use, reduced air pollution, increased property values.

4.2.5 State-5: Industrial Boiler Efficiency

Measure Description: This measure evaluated by CARB would require one or more of the following: annual tuning of all boilers, the installation of an oxygen trim system, and/or a noncondensing economizer to maximize boiler efficiency. A facility could also replace an existing boiler with a new one that is equipped with these systems.

Entity Responsible for Implementation: The State of California is responsible for implementing this measure.

Measure Implementation Details: This measure would be implemented gradually as industrial facilities replace their boilers.

Co-Benefits: Reduced energy use and reduced air pollution.

4.2.6 State-6a: AB 1493 (Pavley I and II) Greenhouse Reductions from New Passenger Vehicles

Measure Description: AB 1493, (Pavley I) requires CARB to adopt vehicle standards that will lower GHG emissions from new light-duty autos in 2009. Additional strengthening of the Pavley standards (Pavley II or Advanced Clean Cars measure) has been proposed for vehicle model years 2017–2025. Together, the two standards are expected to increase average fuel economy to roughly 43 miles per gallon by 2020 and reduce GHG emissions from the transportation sector in California by approximately 14%.

Entity Responsible for Implementation: The State of California, EPA and NHTSA, and vehicle manufacturers are responsible for implementing the Pavley standards.

Measure Implementation Details: The 2011—2016 standards would be implemented through 2016 and the 2017—2025 standards would be implemented through 2020. Implementation in the Partnership cities would be gradual through 2016 and 2020 as older vehicles are replaced with more fuel efficient vehicles.

Co-Benefits: Reduced energy use, reduced air pollution, public health improvements, and energy security.

4.2.7 State-6b (On-Road) and State-8 (Off-Road): Executive Order S-1-07 Low Carbon Fuel Standard

Measure Description: Mandates the following: (1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10% by 2020, and (2) that a LCFS for transportation fuels be established in California.

Entity Responsible for Implementation: The State of California and vehicle fuel manufacturers are responsible for implementing this measure.

Measure Implementation Details: The standard would be fully implemented by 2020. Implementation in the Partnership cities would occur as fuel is improved statewide.

Co-Benefits: Reduced air pollution, public health improvements, energy security, reduced price volatility, and economic development.

4.2.8 State-7: Assembly Bill 32 (AB 32) Transportation Reduction Strategies

Measure Description: The AB 32 Scoping Plan includes vehicle efficiency measures (in addition to Pavley and LCFS) that focus on maintenance practices. The following AB 32 reduction strategies and/or programs are recommended.

- Tire Pressure Program (assures vehicle tire pressure is maintained to manufacturer specifications).
- Low Rolling Resistance Tires (creates an energy efficiency standard for automobile tires to reduce rolling resistance).

- Low Friction Engine Oils (mandates the use of engine oils that meet certain low friction specifications).
- Cool Paints and Reflective Glazing (reduces the engine load for cooling the passenger compartment with air conditioning through the use of solar reflective paints and window glazing).
- Goods Movement Efficiency (targets system-wide efficiency improvements in goods movement to achieve GHG reductions from reduced diesel combustion).
- Heavy-Duty Vehicle GHG Emission Reduction (requires installation of best available technology and/or CARB approved technology to reduce aerodynamic drag and rolling resistance).
- Medium-and Heavy-Duty Vehicle Hybridization (adopts a regulation and/or incentive program that reduces the GHG emissions of new vehicles sold in California by replacing them with hybrids).

Entity Responsible for Implementation: The State of California is responsible for implementing this measure.

Measure Implementation Details: Implementation in the Partnership cities would occur gradually through 2020 as the statewide strategies and programs are put into effect.

Co-Benefits: Reduced energy use, reduced air pollution, public health improvements, and energy security.

4.2.9 State-9: AB 32 Methane Capture

Measure Description: The Landfill Methane Rule requires gas collection and control systems on landfills with greater than 450,000 tons of waste-in-place. The measure also establishes statewide performance standards to maximize methane capture efficiencies.

Entity Responsible for Implementation: Landfill owners and operators are responsible for complying with the landfill regulation.

Measure Implementation Details: This measure would be implemented gradually by 2020 as landfill operators comply.

Co-Benefits: Reduced air pollution, resource conservation, and increased quality of life.

4.3 County Measures

The San Bernardino County plans to install methane capture systems at a number of county-owned and operated landfills. Since these landfills serve a number of the Partnership cities, the cities would see emission reductions from their solid waste management sector, as fewer fugitive methane emissions from the decomposition of city-generated waste would be released into the atmosphere.

4.3.1 County-1: San Bernardino County GHG Reduction Plan Landfill Controls

Measure Description: San Bernardino County, through the adopted Plan, would install landfill gas controls on the following County-owned and operated landfills.

- 95% capture at Mid-Valley landfill
- 85% capture at Milliken and Colton landfills
- 75% capture at Barstow and Landers landfills

Since these landfills serve several of the cities of San Bernardino County, these cities would realize GHG reductions from the county's installation of landfill gas controls.

Entity Responsible for Implementation: The County of San Bernardino is responsible for implementing this measure.

Measure Implementation Details: San Bernardino County would need to upgrade and install equipment as necessary to increase and utilize the captured methane gas. The installation of equipment is a one-time event, and implementation would be complete once the equipment begins operating.

Level of Commitment: San Bernardino County would install methane capture technology and associated monitoring systems on the landfills listed above.

Co-Benefits: Reduced energy use and reduced air pollution.

4.4 Local Measures

4.4.1 Local Measures: Building Energy

Building energy use from residential, commercial, and industrial buildings is a large component of the regional GHG inventory, accounting for 40% of the total regional emissions in 2008 and 2020. Building energy consumption includes electricity and natural gas usage. Electricity use in buildings results in indirect emissions from the power plants that produce electricity outside of city boundaries. Natural gas consumption by furnaces and other appliances in buildings results in direct emissions where the natural gas is combusted.

The building energy sector is typically the largest or second largest contributor of GHG emissions to a jurisdiction's GHG inventory. Consequently, building energy-related reduction measures typically yield substantial reductions.

Reduction measures to address GHG emissions from building energy use are separated into two categories: energy efficiency and renewable energy. Energy efficiency measures are intended to promote efficient energy usage, whereas renewable energy measures are intend to change the carbon content of electricity.

Energy consumption typically represents a large portion of GHG emissions for regions. Reducing electricity usage and improving energy performance are therefore vital to the Plan. Energy retrofits

have upfront costs, but can result in savings over the long term. In this sector, private residents, businesses, and the municipal governments would incur costs to upgrade to energy efficient technologies but would also realize the resulting energy cost savings. Costs to the city governments would mainly be associated with staff time for development of the incentive programs, as well as costs of retrofits to existing municipal buildings and upfront costs for building new city facilities.

The building energy measures would also result in other benefits for both small and large businesses, as well as households in each city. Reductions in electricity use and the generation of renewable energy from clean technologies (e.g., wind, solar) would contribute to reductions of regional criteria pollutants. Less combustion of natural gas may also produce local air quality and public health benefits. Overall, reductions in energy consumption and expenditures would enhance the ability of homeowners and business to withstand unexpected surges in future energy costs. Energy retrofits would also improve home values and likely contribute to economic growth by providing new jobs within the community.

The Plan includes the following nine building energy measures. Reductions for these measures are presented in Appendix B.

4.4.1.1 Energy Efficiency Measures

4.4.1.1.1 Energy-1: Energy Efficiency Incentives and Programs to Promote Energy Efficiency for Existing Buildings

Measure Description: Promote energy efficiency in existing residential buildings and nonresidential buildings, and remove funding barriers to energy-efficiency improvements. The following implementation strategies can be used to help achieve these goals:

- Promote energy efficiency in *residential* buildings:
    - Implement a low-income weatherization program.
    - Partner with community services agencies, utilities (Colton Electric Utility), nonprofits, and other entities to incentivize energy-efficiency projects, including HVAC, lighting, water heating equipment, insulation, and weatherization for low income residents. Residential energy-efficiency projects can be financed through programs such as PACE or California First, which allow property owners to finance improvements that are repaid through an assessment on their property taxes for up to 20 years. Incentives, such as those available from California Energy Upgrade, through Southern California Gas Company can also assist. These and similar programs are often administered through the participating local government entity.
    - Launch energy-efficiency campaigns targeted at residents. Provide public education on the need for energy efficiency and emissions reduction programs and incentives.
- Promote energy efficiency in *nonresidential* buildings:
    - Incentivize schedule energy-efficiency "tune-ups" of existing buildings. Energy audit and tune-up programs are typically run by the local utility. Cities would work with utilities to take advantage of energy audit programs for municipal buildings and promote awareness of these programs for private commercial buildings.

- Promote individualized energy management services for large energy users. Cities would work with utilities to take advantage of energy audit programs for municipal buildings and promote awareness of these programs for private commercial buildings.
- Partner with utilities to leverage the Savings by Design incentive program for commercial projects. Savings by Design incentive requires 10% better than Title 24 energy efficiency standards in order to qualify; up to $200K in performance rebates per project are available.

- Remove funding barriers to energy-efficiency improvements. For example, leverage federal tax credits or local rebates, such as those offered by Colton Electric Utility. Participate in programs (national, state, or regional) that provide innovative, low-interest financing for energy-efficiency and alternative energy projects. Promote incentives to encourage the use of energy-efficient equipment and lighting. Provide financial incentives for adoption of identified efficiency measures.
  - Launch energy-efficiency campaigns targeted at business. Provide public education on the need for energy efficiency and emissions reduction programs and incentives. Outreach programs can be sponsored by individual cities or by a region-wide consortium.
  - Remove funding barriers to energy-efficiency improvements. For example, leverage federal tax credits or local rebates, such as those offered by Southern California Edison. Identify funding sources to assist affordable housing managers in incorporating energy-efficient designs and features.
  - Participate in PACE programs such as California First or similar, as feasible. These programs allow property owners to finance improvements that are repaid through an assessment on their property taxes for up to 20 years. These and similar programs are often administered through the participating local government entity.

Entity Responsible for Implementation: This measure would be implemented by individual city governments and in part by utilities. It would also involve collaboration between cities (sub-regional implementation).

Measure Implementation Details: SANBAG is supporting potential PACE-style funding district development in San Bernardino for interested cities. To implement this measure, the city governments can leverage external funding sources, develop educational campaigns, and other strategies outlined in the measure description. Implementation of this measure would be gradual through 2020 as residents change their energy consumption behavior and as existing buildings undergo energy-efficiency improvements. Implementation would vary by city.

Level of Commitment: The City anticipates approximately 35% of retrofits of existing homes and nonresidential buildings by 2020 from the programs that will implement this measure.

Co-Benefits: Reduced energy use, reduced air pollution, increased property values, public health improvements, and increased quality of life.

4.4.1.1.2 Energy-2: Outdoor Lighting Upgrades for Existing Development

Measure Description: Adopt outdoor lighting standards in the zoning ordinance to reduce electricity consumption above and beyond the requirements of AB 1109. This could be achieved by requiring 50% of outdoor lighting fixtures to use LED bulbs and 100% of traffic signals to use LED

bulbs by 2020 (California Air Pollution Control Officers Association 2009 and 2010; California Attorney General's Office 2010). The lighting standards could also include the following provisions.

- Encourage lighting along the urban-rural edge, not to exceed one-half the current maximum lighting standard.
- Prohibit continuous all night outdoor lighting in parks, sport facilities, construction sites, and other relevant areas (unless it compromises safety).

Entity Responsible for Implementation: The individual city governments are responsible for implementing this measure.

Measure Implementation Details: To implement this measure, the city governments can adopt outdoor lighting standards in their zoning ordinances. Implementation would be gradual through 2020 as an increasing number of outdoor lighting fixtures are replaced with energy-efficient fixtures.

Level of Commitment: The City anticipates approximately 50% of all new and existing residential outdoor lighting to be CFL lights, a certain percentage of all nonresidential outdoor lighting to be halogen/LED lights, and 100% of all traffic signals to be LED lights.

Co-Benefits: Reduced energy use, reduced air pollution, increased property values, and increased quality of life.

4.4.1.2 Renewable Energy

4.4.1.2.1 Energy-4: Solar Installations in New Housing Developments

Measure Description: Establish a goal for solar installations on new homes to be achieved before 2020 (California Air Pollution Control Officers Association 2009, 2010). Potential goals might be:

- Aggressive—50% of new units have solar installations.
- Medium—25% of new units have solar installations.
- Low commitment—10% of new units have solar installations.

The selected goal could be achieved in part through programs such as the California Energy Commission's New Solar Homes Partnership (this program provides rebates to developers of six units or more who offer solar power in 50% of new units) for properties in the City of Colton served by Southern California Edison. Other, similar programs with solar power requirements equal to or greater than those of the California Energy Commission's New Solar Homes Partnership could also be accessed, including private funding from solar companies, or other solar lease Power Purchase Agreements (PPAs). The cities may also act as resources for connecting project proponents with funding opportunities. This measure could complement voluntary CALGreen measures related to solar photovoltaic systems.

Entity Responsible for Implementation: The individual city governments, in coordination with external funding programs and/or private companies, are responsible for implementing this measure.

Measure Implementation Details: To implement this measure, the city governments can work with residential developers, state funding programs, and private companies to facilitate funding for

solar energy projects. Implementation of this measure would be gradual through 2020 as new housing developments are constructed and equipped with solar installations.

Level of Commitment: The City anticipates approximately 75% of solar installation on new single-family homes resulting from this measure.

Co-Benefits: Reduced air pollution, waste reduction, energy diversity and security, reduced price volatility, economic development, public health improvements, and increased property values.

4.4.1.2.2 Energy-8: Solar Installations for Existing Commercial/Industrial Buildings

Measure Description: Establish a goal for solar installations on existing commercial/industrial buildings to be achieved before 2020 (California Air Pollution Control Officers Association 2009, 2010) Potential goals might be:

- Aggressive—30% of existing buildings have solar installations.
- Medium—20% of existing buildings have solar installations.
- Low commitment—10% of existing buildings have solar installations.

The selected goal could be achieved in part through private funding from solar companies, or other solar lease PPAs. Additionally, nonfinancial incentives and streamlined permitting at the local level can support this goal. The cities may also act as resources for connecting property owners with funding opportunities. This measure could complement voluntary CALGreen measures related to solar photovoltaic systems.

Entity Responsible for Implementation: The individual city governments, in coordination with external funding programs and/or private companies, are responsible for implementing this measure.

Measure Implementation Details: To implement this measure, the city governments can work with building owners, state funding programs, and private companies to provide funding for solar energy projects. Implementation of this measure would be gradual through 2020 as solar is installed on existing buildings.

Level of Commitment: The City anticipates approximately 10% of existing commercial and industrial buildings (private and/or public buildings) to install solar to provide a minimum of 15% of the building's onsite energy needs.

Co-Benefits: Reduced air pollution, waste reduction, energy diversity and security, reduced price volatility, economic development, public health improvements, and increased property values.

4.4.2 Local Measures: On-Road Transportation

On-road transportation emissions include emissions from light- and medium-duty vehicles and heavy-duty trucks associated with land use activity in each of the Partnership cities. Emissions originate from the combustion of fossil fuels (such as diesel, gasoline, compressed natural gas, etc.) to power the vehicles. These emissions are direct emissions and accounted for approximately 46% of total regional emissions in 2008 and 2020.

The total VMT by residents and employees in the Partnership cities is expected to increase by the year 2020 under business as usual conditions as new housing units are developed and new jobs are created. The transportation represents the largest source of GHG emissions in the Partnership cities' future community GHG inventory. As a result, transportation related reduction measures need to be a part of reducing the region's overall GHG emissions in 2020.

Reduction measures in the on-road transportation sector have among the highest GHG reductions relative to other sectors. It is important to note that the measures outlined below would also contribute to significant reductions in GHG emissions beyond 2020 because they would create a transportation and land use network that supports mixed-use, high density development and alternative modes of transportation.

On-road transportation measures can achieve significant benefits for both individual residents and the region as a whole. Reductions in VMT and traffic congestion would reduce smog-forming emissions, toxic air contaminants, and diesel particulate matter (California Air Resources Board 2008). Alternative modes of transportation, such as bicycling, walking, and transit, may also help reduce many serious health risks associated with vehicle exhaust. Community well-being and quality of life may also be improved as individuals spend less time commuting, waiting for the bus, and/or sitting in heavy congestion.

4.4.2.1 On Road-1: SB 375 Sustainable Communities Strategy (Regional)

4.4.2.1.1 Measure Overview

Measure Description: SB 375 provides for a new planning process that coordinates land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals established in AB 32. While Pavley and LCFS seek to reduce fuel consumed and reduce the carbon content of fuel consumed, SB 375 seeks to reduce VMT through land use planning. SB 375 requires regional transportation plans, developed by MPOs to incorporate an SCS in their RTPs. The goal of the SCS is to reduce regional VMT through land use planning and associated transportation patterns. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development. The regional GHG reduction target for SCAG is 8% by 2020 and 13% by 2035, compared to 2005 GHG emissions on a per capita basis. SCAG's 2012–2035 RTP/SCS, if fully implemented would successfully achieve the targets set by CARB.

Entity Responsible for Implementation: The Partnership cities and SCAG are responsible for implementing this measure. SANBAG plays a supporting role in enabling transportation improvements, such as extension of the Metrolink line to Redlands and Bus Rapid Transit improvements in San Bernardino County.

Measure Implementation Details: Each city would need to determine which strategies would be implemented in its jurisdiction. Implementation of this measure would also require coordination between multiple entities (such as on transit improvements) and would be gradual through 2020 (and would continue beyond 2020).

Level of Commitment: This measure allows for flexibility in how the cities participate in the SCS. Cities may be able to implement the SCS strategies partially, but perhaps not to the full degree called

for in the SCS. The details of this measure are provided in On Road 1.1 through .On Road 1.14 as described below:

Co-Benefits: Reduced energy use, reduced air pollution, public health improvements, energy security, increased quality of life, and smart growth.

4.4.2.1.2 Specific Local Measure Options Consistent with the SCS

The following measures are consistent with the strategies included in the SCS. They are included below because they represent individual transportation measures that the cities can implement as part of the SCS.

On-Road-1.1: Improve Transit Travel Time and Connectivity (Regional)

Measure Description: To the extent feasible, reduce transit passenger travel time through reduced headways and increased speed. In addition, improve intermodal connectivity among transit systems. These goals could be pursued in connection with, and in addition to, adoption of SANBAG's LRTP.

On-Road-1.2: Other Transit Improvements (Regional)

Measure Description: Work with local and regional transit agencies to secure the following services.

- Additional Bus Rapid Transit routes, and other transit choices such as shuttles and rail, beyond what is outlined in the SANBAG LRTP.
- Convenient feeder service from multimodal transit center to downtown employment centers.
- Region-wide bus/transit passes.
- Park-and-ride lots.
- New opportunities to finance further transit service for the elderly, handicapped, and recreational purposes.
- Shuttle service to transport facilities (e.g., park-and-ride lots).
- Idling limits for transit fleets.

On-Road-1.3: Public Transit Funding (Regional)

Measure Description: Collaborate with a broad range of agencies and organizations to improve and expand funding for public transit infrastructure and operations.

On-Road-1.4: Adopt Land Use Patterns to Favor Transit-Oriented Development (Local Regional)

Measure Description: This strategy would involve changes to local general plans to further prioritize transit-oriented development along existing and planned transit facilities. This strategy could build on one of the alternatives considered in the LRTP alternative, which redistributes population and employment growth to transit corridors, and promotes transit oriented development at station areas.

On-Road-1.5: Nonmotorized Zones (Local)

Measure Description: Create urban nonmotorized zones in downtown areas where feasible. Consider establishing a goal for conversion of downtown roadway miles to transit, linear parks, or other nonmotorized zones (California Air Pollution Control Officers Association 2010) and provide for the following services.

- Monitor traffic and congestion to determine roadways that should be targeted for improvements.
- Evaluate potential efficiency gains from further signal synchronization. Synchronize traffic signals throughout the city and with adjoining cities while allowing free flow of mass transit systems. Require continuous maintenance of the synchronization system
- Allow for more-efficient bus operation, including possible signal preemption, and expand signal-timing programs where air quality benefits can be demonstrated.

On-Road-1.6: Traffic Calming (Local)

Measure Description: Provide traffic calming measures to encourage people to walk or bike instead of using a vehicle.

On-Road-1.7: Traffic Signal Synchronization (Local)

Measure Description: Improve travel speed by enhanced signal synchronization.

On-Road-1.8: Parking Policy (Local)

Measure Description: As part of the parking policy, consider designating a percentage of downtown parking spaces for ride-sharing vehicles, while reducing the available downtown parking spaces for private vehicles (California Air Pollution Control Officers Association 2009, 2010) (*Supporting General Plan policies: Trans-4)*. The following implementation strategies can be used to help achieve these goals.

- Use parking pricing to discourage private vehicle use, especially at peak times.
- Create parking benefit districts, which invest meter revenues in pedestrian infrastructure and other public amenities. Parking districts should be encouraged throughout the county, but they should be concentrated in high traffic areas, including downtowns.
- Provide convenient pathways through parking for pedestrians; provide shade trees for parking.
- Encourage larger parking spaces to accommodate vans used for ride-sharing, as well as adequate passenger loading and waiting areas.

On-Road-1.9: Trip Reduction Ordinance (Local)

Measure Description: Implement a voluntary trip reduction ordinance that promotes the preparation and implementation of a trip reduction plan (TRP)[1] for large employers (100 employees or more). Possible performance targets for the TRPs could be a reduction of the vehicle trips per

[1] The TRP should include, at a minimum, performing annual employee commute surveys, marketing of commute alternatives, ride matching assistance, and transit information.

employee by 15% in 5 years and 25% in 10 years (California Air Pollution Control Officers Association 2010). The TRP could also consider:

- Limiting the hours when deliveries can be made to off-peak hours in high traffic areas.
- Conducting annual employee commute surveys to help inform trip reduction goals and focus implementation strategies.

On-Road-1.10: Employer Provided Fringe Benefits (Local)

Measure Description: Encourage use of telecommuting and alternative work schedules for employees. Encourage other employer benefits to reduce VMT, including a Guaranteed Ride Home Program.[2]

On-Road-1.11: Pedestrian Bicycle Lanes (Local/Regional)

Measure Description: Create bicycle lanes directed to the location of schools and major employment districts.

On-Road-1.12: Pedestrian and Bicycle Network Improvements (Local/Regional)

Measure Description: Provide improvement to the existing pedestrian and bicycle network as follows:

- Encourage the development of bicycle stations[3], attended parking, and other attended bicycle parking support facilities at intermodal hubs.
- Establish a network of multiuse trails to facilitate safe and direct off-street bicycle and pedestrian travel. Provide bike racks along these trails at secure, lighted locations.
- Evaluate and consider free bicycles for public use and/or charge a nominal fee for their use.
- Amend or implement a development code to include standards for provision of safe pedestrian and bicyclist accommodations, including "Complete Streets" policies that foster equal access by all users, including pedestrians and bicyclists. Include standards in the design of roadways. As appropriate, require new development and redevelopment projects to address bicycle and pedestrian access internally and to other areas through easements; safe access to public transportation and construction of paths that connect with other nonmotorized routes; and safe road crossings at major intersections for school children and seniors.
- Apply for regional, state, and federal grants for bicycle and pedestrian infrastructure projects. Consider using state gas tax subventions, sales tax funds, other funding sources, and development exactions/impact fees to provide bicycle and pedestrian facilities.
- Prohibit projects that impede bicycle and walking access, e.g., large parking areas that cannot be crossed by nonmotorized vehicles, and new residential communities that block through-access on existing or potential bicycle and pedestrian routes.

[2] A relatively low-cost method of supporting alternative mode use, guaranteed ride home programs provide an "insurance policy" against being stranded in cases of illness, family crisis, rideshare vehicle breakdown, etc.

[3] Bike stations are full-service bicycle facilities providing secure and guarded "valet" bicycle parking in addition to other possible amenities, such as showers or bicycle rentals and repairs.

- Develop and implement a bicycle safety education program to teach drivers and bike riders the laws, riding protocols, routes, safety tips, and emergency maneuvers to increase confidence, safety, and frequency of use for new and existing bike riders.

On-Road-1.13: Alternative Fuel Infrastructure (Local/Regional)

Measure Description: Promote the necessary facilities and infrastructure to encourage the use of privately owned low- or zero-emission vehicles such as electric vehicle charging facilities and conveniently locate alternative fueling stations. Convert public transit, street sweeping, and refuse fleets to alternative fuels and provide supporting infrastructure. Examine the use of smaller, more fuel-efficient taxicabs and offering incentives to taxicab owners to use gas-electric hybrid vehicles.

On-Road-1.14: School Programs and Outreach (Local)

Measure Description: Collaborate with local public schools districts to expand school bus services and routes. Encourage ridesharing programs in private schools to match parents by geographical location for student transport including the following.

- Continue to provide public education and information about options for reducing motor vehicle-related GHG emissions. Include information on trip reduction; trip linking; public transit; biking and walking; vehicle performance and efficiency (e.g., keeping tires inflated); low- or zero-emission vehicles; and car and ride sharing.

4.4.2.2 On Road-2: "Smart Bus" Technologies (Regional)

Measure Description: Collaborate with Omnitrans to implement "Smart Bus" technology, global positioning system (GPS), and electronic displays at all transit stops by 2020 to provide customers with "real-time" arrival and departure time information[4] (California Air Pollution Control Officers Association 2009).

Smart Bus Technologies include Automatic Vehicle Location (AVL) systems and real-time passenger information at bus stations. Omnitrans plans to implement these technologies system-wide on all bus routes serving San Bernardino Valley (Omnitrans service area) to enable information sharing, enhance rider services, and attract potential riders. The AVL system has already been implemented. The Bus Arrival Prediction Information System (BAPIS) would be installed in two phases. In Phase I, real-time rider information would be available via text messaging, Quick Response (QR), website, Interactive Voice Response (IVR), and mobile phone devices. Completed implementation is slated for December 2012. In Phase II, Omnitrans will install electronic signs at all major transit hubs and provide General Transit Feed Specification (GTFS) data to the general public to build apps for mobile devices like smartphones and tablet computers. Phase II completion is slated for December 2013.

GHG emissions are expected to decrease because the AVL technologies could lead to more fuel-efficient bus operations for Omnitrans and the BAPIS technologies could potentially attract more transit riders who may switch modes from automobiles. Omnitrans' Demand Response Services, OmniLink and Access, do not operate on a fixed schedule or route and are not included in this analysis.

[4] These systems not only allow riders to know exactly when the next vehicle will be arriving, but also enable the system operator to track, schedule, and repair vehicles in service. Providing better information to passengers about scheduled arrivals can result in dramatic increases in passengers' perceptions of the service, even if the actual service provided is the same in terms of frequency and on-time arrivals.

Entity Responsible for Implementation: Omnitrans is primarily responsible for this measure. The Partnership cities and individual city governments would coordinate with Omnitrans as appropriate.

Measure Implementation Details: To implement this measure, the Partnership cities would coordinate with Omnitrans in the region to utilize "Smart Bus" and similar technology. Implementation of this measure would most likely be achieved in increments as the technology is expanded throughout the region.

Level of Commitment: Omnitrans plans to implement these technologies system-wide on all bus routes serving San Bernardino Valley. Therefore, no local action is required from the cities.

Co-Benefits: Reduced air pollution, public health improvements, and increased quality of life.

4.4.3 Off-Road Equipment

Off-road equipment emissions accounted for approximately 6% of the total regional emissions in 2008 and 2020. These emissions are direct emissions resulting from equipment fuel combustion. Off-road equipment includes construction equipment and off-road vehicles. Typical industries that use off-road equipment include the agricultural, construction, industrial, entertainment, rail yards and dredging sectors. In addition, recreational vehicles (e.g., all-terrain vehicles [ATVs]), pleasure craft (e.g., jet skis), and lawn and garden equipment (e.g., mowers) are sources of off-road emissions.

Reduction measures in the off-road equipment sector typically provide modest GHG reductions relative to other sectors.

The Partnership cities have identified the following measures to increase the use of alternative fuels in off-road equipment and reduce the consumption of fossil fuels. These measures would also achieve significant benefits for both individuals and the region as a whole. For example, electrification of off-road equipment would reduce fossil fuel consumption, thereby contributing to reductions in smog-forming emissions, toxic air contaminants, and diesel particulate matter (California Air Resources Board 2008). Serious health risks associated with heavy-duty vehicles may also be reduced accordingly, resulting in improvements in community health and well-being.

4.4.3.1 Off-Road Equipment-1: Electric-Powered Construction Equipment

Measure Description: Establish a goal such that a percentage of construction equipment utilizes electric equipment (California Air Pollution Control Officers Association 2010). Potential goals might be to require 5% to 25% of equipment on annual projects occurring within the cities to be electrically-powered.

Achieving the goal would require close coordination with the air district that sets air quality related requirements on construction vehicles and also provides mitigation options related to construction vehicles through Voluntary Emission Reduction Agreement (VERA) programs, which may overlap with this measure.

Entity Responsible for Implementation: Partnership cities, SCAQMD, and the Mojave Desert Air Quality Management District could all share in implementing this measure.

Measure Implementation Details: Because the air districts sometimes have mitigation programs for air quality that focus on construction equipment and sometimes have funding to assist with equipment swap-out, cities choosing this measure would benefit from coordinating with the air districts in implementing this measure. Once the goals are adopted, implementation of this measure would be complete, and benefits would be achieved.

Level of Commitment: The City has identified electrification goal of 15% of construction equipment for this measure.

Co-Benefits: Reduced air pollution, public health improvements, and increased quality of life.

4.4.1.2 Off-Road Equipment-2: Idling Ordinance

Measure Description: Adopt an ordinance that limits idling time for heavy-duty construction equipment beyond CARB or local air district regulations and if not already required as part of CEQA mitigation. Recommended idling limit is 3 minutes (California Air Pollution Control Officers Association 2010). As part of permitting requirements or city contracts, encourage contractors to submit a construction vehicle management plan that includes such things as idling time requirements; requiring hour meters on equipment; and documenting the serial number, horsepower, age, and fuel of all onsite equipment. California state law currently requires all off-road equipment fleets to limit idling to no more than 5 minutes.

Entity Responsible for Implementation: The individual city governments are responsible for implementing this measure.

Measure Implementation Details: The city governments can adopt ordinances restricting idling time. Implementation of this measure would be a one-time action. Once the ordinance is adopted, the measure would begin to yield benefits.

Level of Commitment: The City will evaluate the benefits of adopting an ordinance that limits idling time for heavy duty construction equipment to 3 minutes if feasible.

Co-Benefits: Reduced energy use, reduced air pollution, and public health improvements.

4.4.3.3 Off-Road Equipment-3: Electric Landscaping Equipment

Measure Description: Adopt an ordinance that reduces gasoline-powered landscaping equipment use and/or reduces the number and operating time of such equipment. Require 75% of the cities' landscaping equipment be electric by 2020 and 100% by 2030 (California Air Pollution Control Officers Association 2010). Cities would work in close cooperation with the air district in drafting an ordinance or developing outreach programs to be consistent with current air district rules and CEQA guidelines. The ordinance could also include the following provisions for community landscaping equipment.

- Sponsor a lawnmower exchange program that allows residents to trade in their gasoline powered mower for an electric mower at a low or discounted price.
- Require exterior electrical outlets on all new building developments.

Entity Responsible for Implementation: The individual city governments are responsible for implementing this measure.

Measure Implementation Details: The city governments can each adopt an ordinance that would result in compliance with the measure by 2020. Implementation of this measure would be gradual through 2020 and 2030 as residents exchange equipment, and as the Cities swap old equipment for new equipment.

Level of Commitment: The City anticipates approximately 15% of all landscaping equipment in the City will be electric-powered by 2020.

Co-Benefits: Reduced air pollution, public health improvements, and increased quality of life.

4.4.4 Other Land Use Measures (non-Transportation)

Tree planting and rooftop gardens would both reduce energy use from the building energy sector and increase the carbon sequestration potential of the cities. Emission reductions occur in the building energy sector; carbon sequestration was not calculated. Land uses strategies related to reducing transportation emissions were addressed separately in Section 4.5, *On-Road Transportation*.

Large scale tree planting creates dynamic ecosystems within cities that provide environmental and aesthetic benefits. Trees help to clean the air and water, strengthen the quality of place, reduce storm water runoff, create walkable communities, and raise property values. Trees also reduce the heat island effect and provide shading for buildings, reducing air conditioning electricity use. Rooftop gardens provide a cooling effect to the buildings beneath through insulation, reducing energy consumption that would be used to power a central air conditioning system. Reduction measures in this sector are typically the smallest contributor to GHG reductions.

4.4.4.1 Land Use-1: Tree Planting Programs

Measure Description: Establish a citywide tree planting goal or tree preservation goal. Possible implementation mechanisms might include a requirement to account for trees removed and planted as part of new construction and/or establishing a goal and funding source for new trees planted on City property. This measure will reduce energy consumption and associated GHG emissions in the building energy sector by reducing the heat island effect.

Entity Responsible for Implementation: The individual city governments are responsible for implementing this measure.

Measure Implementation Details: The city governments can require trees to be planted as part of new construction, possibly as part of CEQA review and approval of new projects. Implementation of this measure would be gradual as new developments are constructed with accompanying trees.

Level of Commitment: Each city selecting this measure chose a certain number of trees to plant each year. Values range from 100 trees/year to 13,000 trees per year.

Co-Benefits: Reduced energy consumption, reduced air pollution, increased quality of life, and reduced urban heat island effect.

4.4.5 Solid Waste Management

Total emissions from solid waste generated by the cities account for approximately 2.5% of total regional emissions for 2008 and 2020. These emissions are fugitive emissions of methane that occur at numerous landfills spread throughout the state, and are considered an indirect emissions source. The materials disposed of by each Partnership city are recycled, composted, or placed in a landfill. Organic waste that is buried in landfills decomposes under anaerobic conditions to produce methane. Landfill-related emissions from waste are primarily methane, which is released over time when waste decomposes.

Reducing the Partnership cities' GHG emissions from the solid waste management sector includes two approaches: methane capture, and waste reduction through diversion programs. Methane capture reduces fugitive methane emissions that are emitted from waste in landfills as a result of the decomposition process. Capturing the fugitive methane prevents it from reaching the atmosphere. Captured methane can also be utilized as an energy source onsite at a landfill, which reduces the need for external energy from a utility.

Waste diversion programs are designed to reduce the amount of waste sent to landfills. In addition to GHG emissions and cost savings, diversion programs may reduce waste-hauling fees, as well as fuel combustion emissions for transporting waste to landfills. Likewise, reductions in landfilled waste would reduce the need for landfill space, which may contribute to future land conservation. Increased recycling and reuse would reduce the need for raw material and energy for manufacturing, thereby contributing to fuel savings and criteria pollutant reductions.

Reduction measures in the solid waste management sector typically provide modest GHG reductions relative to other sectors.

4.4.5.1 Waste-1: Increased Waste Diversion

Measure Description: Exceed the waste diversion goal (50%) recommended by Assembly Bill 939 and CALGreen by adopting citywide waste goals of at least 75% of waste diversion (California Air Pollution Control Officers Association 2010). In instances where cities operate their own waste services programs, they will have responsibility to expand or establish composting, recycling, and yard waste programs to residences and businesses. Cities would work with waste providers to identify baseline, opportunities, and achievable diversion goals before a certain time period, all of which can be incorporated into the waste provider's contract with a jurisdiction. This measure could include:

- Expand educational programs to inform residents about reuse, recycling, composting, waste to energy, and zero waste programs. Encourage local recycling and composting initiatives at the neighborhood level.
- Adopt a construction and demolition waste recovery ordinance that meets the CALGreen voluntary guidance of a 65% to 75% reduction in nonhazardous construction and demolition waste.
- Encourage local businesses to expand their recycling and composting efforts and to reduce packaging of products manufactured in the cities.
- Establish a reuse/recycling center where furniture, appliances, building materials, and other useful, nonhazardous items may be dropped off or purchased for a nominal fee.

- Enhance regional coordination on waste management, to take advantage of economies of scale of recycling, composting, and other diversion programs.

Entity Responsible for Implementation: The individual city governments along with waste service providers are responsible for implementing this measure.

Measure Implementation Details: City governments that operate their own waste services programs can develop educational programs to encourage residents to reduce waste. City governments that utilize a private contractor for waste collection can work with that contractor to expand education and outreach programs. Waste diversion generally increases gradually on an annual basis.

Level of Commitment: The City has a waste diversion goal of 50% from landfills and has adopted a construction and demolition waste recovery ordinance in 2014.

Co-Benefits: Reduced air pollution and resource conservation.

4.4.6 Wastewater Treatment and Discharge

Total emissions from wastewater treatment account for approximately 0.4% of the total regional emissions in 2008 and 2020. There are numerous large and small wastewater treatment plants (WWTPs) located within the boundaries of this inventory that serve the Partnership cities' residents and businesses. Twentynine Palms and Yucca Valley utilize septic systems. The Inland Empire Utilities Agency (IEUA) operates four plants, servicing the more metropolitan areas of Chino, Chino Hills, Fontana, Ontario, Rancho Cucamonga, Montclair and portions of the unincorporated county. The City of San Bernardino also operates several WWTPs, servicing the cities of San Bernardino, Loma Linda and portions of the unincorporated county. The Cities of Big Bear Lake, Victorville and Hesperia are served by the smaller regional agencies, BBARWA and Victor Valley Wastewater Agency (VVWA). The remaining Partnership Cities (Highland, Needles, Rialto, Adelanto, Redlands, Yucaipa and Grand Terrace) have individual plants. GHG emissions result from electricity and/or natural gas used to power the facilities. These indirect emissions are included in the inventory in either the building energy or the water sectors, depending on where the WWTP is located. Additional emissions of CH_4 and N_2O result from the treatment and breakdown of waste in the facility. These are commonly referred to as *fugitive emissions* and are classified as direct emissions. In general, the fugitive emissions associated with septic systems are higher than those at a centralized WWTP. Wastewater generated in each city would be sent to WWTPs, which may be outside the city. Consequently, some of these emissions would not occur within the boundaries of each city generating the wastewater, but each city is responsible for creating this wastewater.

Reduction measures in the wastewater treatment and discharge sector typically provide modest GHG reductions relative to other sectors.

Reducing the Partnership cities' GHG emissions from the wastewater treatment sector includes methane capture and combustion at the WWTPs, improving the efficiency of equipment such as pumps, and using more recycled water. These types of retrofits are for centralized WWTP systems and do not apply to septic systems. The cost of these plant retrofits are incurred by the plant operator, which may be a city, a JPA, or a contracted plant operator. WWTP operators confirmed the presence of or plans for methane capture and the status of their respective energy efficiency projects. For plants operated by an individual Partnership city, the City's selection of any measure

related to capital improvements at the plant was considered equivalent to the commitment of a plant operator.

Methane capture reduces fugitive methane emissions that are emitted during the wastewater treatment process. Capturing the fugitive methane prevents it from reaching the atmosphere. Captured methane can also be utilized as an energy source to generate electricity or produce vehicle fuel, which reduces the need for external energy or fuel from a utility. Equipment upgrades can reduce the amount of electricity and natural gas used to power the equipment, which in turn reduces emissions associated with fuel combustion. Increasing the use of recycled water reduces the need for electricity to supply imported water or groundwater to the cities, which reduces indirect emissions from electricity generation.

4.4.6.1 Wastewater-1: Methane Recovery

Measure Description: Work with the IEUA or other local wastewater treatment providers (small or large to identify funding and cooperating agencies for establishing methane recovery systems at all WWTPs that service San Bernardino Partnership cities residents by 2020, as appropriate. WWTPs in the region operated by IEUA, City of San Bernardino, VVWA, City of Redlands and Yucaipa Valley Water District already capture and flare methane at a minimum. Several also utilize waste heat on site or methane powered generators to power various facilities, offsetting approximately 30% of their power needs in the case of IEUA. Cities serviced by these providers would not benefit from this measure (unless the capture system was installed after 2008), only plants that have not yet installed methane capture. For plants that only capture and flare, additional benefits could be achieved by using the methane for electricity or heating onsite. Operators of these facilities would work with SANBAG, regional power providers, Partnership cities or other entities to identify funding for this installation. Install equipment for the combustion of digester gas at all WWTPs by 2020 (California Air Pollution Control Officers Association 2010).

Entity Responsible for Implementation: The WWTPs that serve the region are responsible for implementing this measure. However they may be funded through public private partnership as will IEUA's Ontario WWTP fuel cell project.

Measure Implementation Details: This measure would require the individual WWTPs to install methane recovery equipment. The installation of equipment is a one-time event, and implementation would be complete once the equipment begins operating.

Level of Commitment: The City will collaborate with the IEUA or other local wastewater treatment provider to establish methane recovery systems if feasible.

Co-Benefits: Reduced energy use and reduced energy price volatility.

4.4.7 Water Conveyance

Water consumption emissions accounted for approximately 2% of total regional emissions in 2008 and 2020. Each city's water consumption includes the following indirect emissions by activity: electricity consumption for water supply and conveyance, water treatment, water distribution, and wastewater treatment. Water is not only an important resource with limited supplies, but the treatment, distribution, and conveyance of water requires considerable amounts of electricity. The

generation of this electricity consumes fossil fuels and releases GHGs. Reducing water demand and conserving water can therefore save energy and avoid future emissions.

Reduction measures in the water conveyance sector typically contribute small GHG reductions relative to other sectors.

The Partnership cities have identified the following strategies to enhance community-wide water and resource conservation. These strategies would collectively reduce water consumption, which would likewise contribute to reductions in building energy use. For example, efficient faucets that use less water would require less electricity and natural gas for hot water heating. Additionally, energy required to transport, distribute, and treat water would be reduced. The consumption of less electricity and natural gas would ultimately translate to reductions in region and local criteria pollutants, which may improve community health and well-being. Water measures that encourage building retrofits also have an additional benefits of enhancing building value and resale.

It is important to note that the water conservation measures would achieve reductions in the building energy sector. However, the emissions savings are reported as part of the water sector because they are a direct result of implementation of water conservation measures.

4.4.7.1 Water-1: Require Adoption of the Voluntary CALGreen Water Efficiency Measures for New Construction

Measure Description: Require adoption of the voluntary CALGreen water efficiency measures (at least Tier 1) for new construction. CALGreen voluntary measures recommend use of certain water-efficient appliances, plumbing and irrigation systems, as well as more aggressive water-savings targets. Update building standards and codes for new residential and nonresidential buildings to require adoption of these voluntary measures, including:

- Use of low-water irrigation systems.
- Installation of rainwater and gray water systems.
- Installation of water-efficient appliances and plumbing fixtures, as well as composting toilets.
- A 30–40% reduction over baseline in indoor water use, and a 55–60% reduction in outdoor potable water use (CALGreen Tier 1 or 2) compared to 2008 water use.

Entity Responsible for Implementation: The individual city governments are responsible for implementing this measure.

Measure Implementation Details: The city governments can choose to include the voluntary CALGreen measures in their building codes. Implementation would be gradual through 2020 as new buildings are constructed with water-efficient fixtures.

Level of Commitment: The City adopted the CALGreen water-efficiency measures (at least Tier 1) for new construction.

Co-Benefits: Reduced energy use, reduced air pollution, resource conservation, and increased property values.

4.4.7.2 Water-3: Encourage Water-Efficient Landscaping Practices

Measure Description: Encourage water-efficient landscaping practices. Adopt a landscaping water conservation ordinance that exceeds the requirements in the Model Landscape Ordinance (AN 1881). The conservation plan could include provisions for any of the following.

- Further reducing the ET Adjustment factor listed in the Model Ordinance.
- Limiting turf grass areas.
- Providing approved plant lists.
- Implement a public education and outreach campaign to promote water conservation. The program should highlight specific water-wasting activities to discourage, such as the watering of nonvegetated surfaces and using water to clean sidewalks and driveways, as well as educate the community about the importance of water conserving techniques. Water efficiency training and certification for irrigation designers, installers, and property managers should also be offered.
- Encourage alternatives to lawns and turf uses, except for parks, playing fields, children's play areas, and other specialized uses.
- Promote underground irrigation techniques.
- Encourage extensive use of mulch in landscape areas to improve the water-holding capacity of the soil by reducing evaporation and soil compaction.
- Require drought-tolerate landscape plantings for all municipal buildings.
- Establish landscape maintenance districts along streets for water conservation purposes.
- Promote installation of dual plumbing in all new development, allowing gray water to be used for landscape irrigation.

Entity Responsible for Implementation: The individual city governments are responsible for implementing this measure in concert with water retailers.

Measure Implementation Details: The individual city governments can adopt water conservation plans that surpass the requirements of the Model Landscape Ordinance. Implementation would be gradual through 2020 as residents adopt new water conservation behaviors, and as new developments utilize less water-demanding plants, alternatives to lawns, and gray water infrastructure.

Level of Commitment: The City will adopt a landscaping water conservation plan that exceeds the requirements in the Model Landscape Ordinance (AN 1881) to achieve outdoor water use reductions for a certain percentage of residential and nonresidential buildings.

Co-Benefits: Reduced energy use, reduced air pollution, and resource conservation.

4.4.7.3 Water-4: Senate Bill X7-7 The Water Conservation Act of 2009

Measure Description: SB X7-7 was enacted in November 2009 and requires urban water agencies throughout California to increase conservation to achieve a statewide goal of a 20% reduction in

urban per capita use by December 31, 2020 (referred to as the "20X2020 goal"). Each urban water retailer in the county has established a 2020 per-capita urban water use target to meet this goal.

Entity Responsible for Implementation: The individual urban water retailers in the county, through coordination with individual city governments, are responsible for implementing this measure.

Measure Implementation Details: The urban water retailers will implement water conservation measures according to their 2010 Urban Water Management Plans. The city governments will need to work with their urban water retailer as necessary to reduce per-capita water use by 2020. Implementation depends on the specific urban water management plans, but would likely be gradual through 2020 as new buildings are constructed with water-efficient fixtures and other conservation measures are put into place.

Level of Commitment: The City will meet the requirements of their urban water retailer to reduce per-capita water use by 2020.

Co-Benefits: Reduced energy use, reduced air pollution, resource conservation, and increased property values.

4.4.8 GHG Performance Standard for New Development

4.4.8.1 PS-1: GHG Performance Standard for New Development

Measure Description: Individual cities may adopt a GHG Performance Standard for New Development (PS) that would provide a streamlined and flexible program for new residential and nonresidential projects to reduce their emissions. The PS would be a reduction standard for new private developments as part of the discretionary approval process under CEQA. Under the PS, new projects would be required to quantify project-generated GHG emissions and adopt feasible reduction measures to reduce project emissions to a level that is a certain percent below BAU project emissions. The PS does not require project applicants to implement a pre-determined set of measures. Rather, project applicants are allowed to choose the most appropriate measures for achieving the percent reduction goal, while taking into consideration cost, environmental or economic benefits, schedule, and other project requirements. SCAQMD does not have CEQA significance thresholds for new nonindustrial development at this time. One potential PS reduction goal could be 29%, based on San Joaquin Air Pollution Control District's recommended CEQA significance threshold and based on the calculations of reductions necessary at the state level to meet AB 32 at the time of the Scoping Plan (29% below forecasted 2020 levels = 1990 levels based on data available at that time). Another potential minimum goal could be 20% to 22% based on the most recent 2020 forecast data from CARB.

San Bernardino County adopted a performance standard of 31% for certain discretionary projects within the unincorporated county with emissions more than 3,000 $MTCO_2e$/year. Projects with less than 3,000 $MTCO_2e$/year are still required to meet certain specified performance measures that also result in GHG emission reductions.

A city may select a suite of other local measures that may already meet the PS-1 percent reduction goal specified by that city. In these cases, a city can still select PS-1 and use it to support those local measures, even though direct reductions from PS-1 for those cities may be zero. An effort was made to not to double-count emissions reductions from PS-1 and overlapping local measures.

Entity Responsible for Implementation: The individual city governments are responsible for implementing this measure.

Measure Implementation Details: Implementation of the performance standard would reduce GHG emissions attributable to new discretionary development projects at least 20% to 29% by 2020 (or more if selected by a city). Measurable reductions of GHG emissions would be achieved through each city's review and discretionary approval of residential, commercial, and industrial development projects. It is expected that project proponents would often include energy-efficiency and alternative energy strategies to help reduce their project's GHG emissions because these are often the most cost-effective approach to reducing GHG emissions, but are free to propose any valid measures that would achieve the overall reduction goal.

In order to calculate the reductions from this measure, state measures and local mandatory measures were quantified for new development for each city. These measures achieve a certain portion of the PS goal, depending on the city. The PS contributes the remaining percent reduction required to achieve the PS goal in new developments. The reduction amounts for each individual project within each city from state or other local measures would vary; however, state and local mandatory measures are still expected to result in the largest share of the burden in meeting the PS reduction target for all cities.

Some cities already require discretionary projects, through the CEQA process, to identify their GHG emissions and to mitigate those emissions when feasible mitigation is available and there are no overriding circumstances.

Level of Commitment: The City will adopt a GHG Performance Standard for New Development, requiring a 25 percent reduction in new development emissions within the cities.

Co-Benefits: Co-benefits would depend on the exact measures selected by individual project proponents, but would be the same as the corresponding strategies described for the other measures (e.g., if a project proponent were to select energy efficiency measures as part of meeting project reductions, the benefits would be similar in character to those described for energy-efficiency retrofits).

Table 4-1. Regional GHG Reductions for All GHG Reduction Measures

Measure No.	GHG Reduction Measure	GHG reductions	Percent of State/County reductions (for state measures)	Percent of local reductions (for local measures)	Number of cities selecting/benefitting from measure (for local measures)	Notes
State and County Measures						
State-1	Renewable Portfolio Standard	862,909	25.1%	NA	NA	
State-2	Title 24 (Energy Efficiency Standards)	238,543	6.9%	NA	NA	
State-3	AB 1109	221,925	6.4%	NA	NA	
State-4	Solar Water Heating	4,499	0.1%	NA	NA	
State-5	Industrial Boiler Efficiency	33,610	1.0%	NA	NA	
State-6	Pavley plus LCFS	1,686,866	49.0%	NA	NA	
State-7	AB 32 Transportation Reduction Strategies	152,933	4.4%	NA	NA	
State-8	LCFS: Off-Road	78,930	2.3%	NA	NA	
State-9	AB 32 Methane Capture	10,218	0.3%	NA	NA	
County-1	San Bernardino County GHG Plan Landfill Controls	152,973	4.4%	NA	NA	
Local Measures						
Building Energy						
Energy-1	Promote Energy Efficiency for Existing Buildings	61,623	NA	5.4%	14	
Energy-2	Outdoor Lighting	13,356	NA	1.2%	11	
Energy-3	Green Building Ordinance for New Buildings	11,865	NA	1.0%	8	Not selected for Colton
Energy-4	Solar Installations in New Housing Developments	9,340	NA	0.8%	16	
Energy-5	Solar Installations for New Commercial/Industrial Development	29,579	NA	2.6%	12	Not selected for Colton
Energy-6	Onsite Solar Energy for New and Existing Warehouse Space	80,161	NA	7.0%	6	Not selected for Colton
Energy-7	Solar Installations for Existing Housing	47,299	NA	4.1%	14	Not selected for Colton

Measure No.	GHG Reduction Measure	GHG reductions	Percent of State/County reductions (for state measures)	Percent of local reductions (for local measures)	Number of cities selecting/benefitting from measure (for local measures)	Notes
Energy-8	Solar Installations for Existing Commercial Buildings	22,368	NA	1.9%	13	
Energy-9	Co-Generation Facilities	485	NA	0.0%	7	Not selected for Colton
On Road Transportation						
Transportation-1	Sustainable Communities Strategy	48,155	NA	4.2%	12	
Transportation-2	Smart Bus Technologies	6,103	NA	0.5%	14	
Off Road Transportation and Equipment						
Off Road-1	Electric-Powered Construction Equipment	24,112	NA	2.1%	10	
Off Road-2	Idling Ordinance	5,354	NA	0.5%	11	
Off Road-3	Electric Landscaping Equipment	8,147	NA	0.7%	9	
Solid Waste Management						
Waste-1	Waste Diversion	6,240	NA	0.5%	9	
Water Conveyance						
Water-1	Require Adoption of the Voluntary CALGREEN water efficiency measures for New Construction	9,767	NA	0.9%	9	GHG reductions also include reductions in the building energy and wastewater sectors
Water-2	Renovate Existing Buildings to Achieve Higher Levels of Water Efficiency	26,071	NA	2.3%	8	Not selected for Colton
Water-3	Encourage Water-Efficient Landscaping Practices	11,176	NA	1.0%	13	
Water-4	Implement SB X7-7	496,289	NA	43.4%	21	GHG reductions also include reductions in the building energy and wastewater sectors
Wastewater Treatment and Discharge						
Wastewater-1	Methane Recovery (Regional)	1,716	NA	0.1%	5	
Wastewater-2	Equipment Upgrades (Regional)	22,645	NA	2.0%	15	Not selected for Colton
Wastewater-3	Recycled Water (Overall)	4,141	NA	0.4%	8	Not selected for Colton

Measure No.	GHG Reduction Measure	GHG reductions	Percent of State/County reductions (for state measures)	Percent of local reductions (for local measures)	Number of cities selecting/benefitting from measure (for local measures)	Notes
Agriculture						
Agriculture-1	Methane Capture at Large Dairies	77,556	NA	6.8%	1	Not selected for Colton
Agriculture-2	Utilize Methane Captured at Dairies	2,383	NA	0.2%	1	Not selected for Colton
Land Use and Urban Design						
Land Use-1	Urban Tree Planting	807	NA	0.1%	10	GHG reductions occur in the building energy sector
Land Use-2	Promote Rooftop Gardens	51	NA	0.0%	4	Not selected for Colton
GHG Performance Standard for New Development						
PS-1	GHG Performance Standard for New Development	121,418	NA	10.6%	18	

Chapter 5

Implementation of the CAP and Regional Coordination

5.0 Implementation of the Climate Action Plan

This section describes implementation steps for the CAP to support achievement of the GHG reduction goals for the community at large. Success in meeting the City's GHG emission reduction goal will depend on cooperation, innovation, and participation by the City and residents, businesses, and local government entities. This section outlines key steps that the City would follow for the implementation of this CAP.

Successful implementation of the CAP will require the following components. These are described in more detail below

- Administration and/or staffing
- Financing and budgeting
- Timelines for measure implementation
- Community outreach and education
- Monitoring, reporting, and adaptive management
- Regional coordination

The steps above are not specific to any one Partnership City but are basic steps that any City might take or that other California communities have taken to implement a GHG reduction plan. These are suggested, not required, and are intended to guide a City in its implementation planning.

5.1 Administration and Staffing

The City has designated the CAP Implementation Coordinator (CIC) to oversee the successful implementation and tracking of all selected GHG reduction strategies. The CIC will primarily be responsible for coordinating with contacts across departments to gather data, report on progress, track completed projects, and ensure that scheduling and funding of upcoming projects is discussed at key City meetings.

In addition, the CIC could have the following responsibilities.

- Secure long-term financing for GHG reduction measures (i.e., grant application primary contact).
- Coordinate CAP implementation related meetings.
- Serve as the external communication hub to local and regional climate action organizations including SANBAG.
- Conduct public outreach to inform the community of the City's reduction planning efforts.

- Investigate methods to utilize existing resources and harness community support to better streamline implementation of the local climate action plan.
- Monitor implementation of reduction measures and success of the CAP using the monitoring tools provided by SANBAG
- Develop a protocol for monitoring the effectiveness of emissions reduction programs.
- Establish guidelines for reporting and documenting emissions reduction progress.
- Submit annual reports to the City council.
- Develop a protocol for utilizing the real-time information collected through the verification process to modify and revise existing reduction programs.
- Track state and federal legislation and its applicability to the City.

In general, the goal in implementing the CAP is not to create new administrative tasks or new staff positions necessarily, but rather to leverage existing programs and staff to the maximum extent feasible. Cities should seek to fold GHG planning and long term reduction into their existing procedures, institutional organization, reporting and long-term planning; a process that will be unique to each City.

5.2 Financing and Budgeting

5.2.1 Funding Mechanisms

Implementation of the local GHG reduction measures will require the City and other public agencies, local businesses, developers/builders, and existing commercial building owners and residential homeowners and individuals to incur increased costs for the capital improvements and other investments, and increased operations and maintenance costs. However, in some cases operating costs are anticipated to decrease, resulting in offsetting savings. This section presents a summary of funding and financing options (Table 5-1) available at the writing of this document. Some funding sources are not necessarily directed towards a City, but to a larger regional agency such as SANBAG, a JPA, or a waste services provider serving multiple jurisdictions. The City should continually monitor private and public funding sources for new grant and rebate opportunities and to better understand how larger agencies are accessing funds that can be used for GHG reductions in their area. Leveraging financing sources is one of the most important roles a local government can play in helping the community to implement many of the GHG reduction measures.

Table 5-1. Potential Funding Sources to Support GHG Reduction Measures

State and Federal Funds	
Federal Tax Credits for Energy Efficiency	• Tax credits for energy efficiency can be promoted to residents.
Energy Efficient Mortgages (EEM)	• An EEM is a mortgage that credits a home's energy efficiency in the mortgage itself. • Residents can finance energy saving measures as part of a single mortgage. • To verify a home's energy efficiency, an EEM typically requires a home energy rating of the house by a home energy rater before financing is approved.

	• EEMs are typically used to purchase a new home that is already energy efficient, such as an ENERGY STAR® qualified home.
California Department of Resources Recycling and Recovery (CalRecycle)	• CalRecycle grant programs allow jurisdictions to assist public and private entities in management of waste streams. • Incorporated cities and counties in California are eligible for funds. • Program funds are intended to: ○ Reduce, reuse, and recycle all waste. ○ Encourage development of recycled-content products and markets. ○ Protect public health and safety and foster environmental sustainability.
California Air Resources Board (CARB)	• CARB offers several grants, incentives, and credits programs to reduce on-road and off-road transportation emissions. Residents, businesses, and fleet operators can receive funds or incentives depending on the program. • The following programs can be utilized to fund local measures: ○ Air Quality Improvement Program (AB 118) ○ Carl Moyer Program – Voucher Incentive Program ○ Goods Movement Emission Reduction Program (Prop 1B Incentives) ○ Loan Incentives Program ○ Lower-Emission School Bus Program/School Bus Retrofit and Replacement Account (Prop 1B and EPA Incentives)
Existing Capital Improvement Program	• State and federal funds would most likely continue to local governments, builders, and homeowners in the following forms. ○ Grants ○ Transportation and transit funding ○ Tax credit and rebate programs • The Capital Improvement Program can be utilized for measures relating to traffic or transit.
State Funding for Infrastructure	• The state's Infill Infrastructure Grant Program may potentially be used to help fund measures that promote infill housing development. • Grants can be used for gap funding for infrastructure improvements necessary for specific residential or mixed-use infill development projects.

Transportation-Related Federal and State Funding	• For funding measures related to transit, bicycle, or pedestrian improvements, the following funding sources may be utilized.
	Safe, Accountable, Flexible, Efficient Transportation Equity Act—Legacy for Users (SAFETEA-LU).
	Surface Transportation Program Fund, Section 1108 (STP)
	Congestion Mitigation and Air Quality Improvement Program, Section 1110 (CMAQ)
	Transportation Enhancement Activities (TEA)
	National Recreational Trails Program
	National Highway System Fund (NHS)
	National Highway Safety Act, Section 402
	Transit Enhancement Activity, Section 3003
	Section 3 Mass Transit Capital Grants
	Bridge Repair & Replacement Program (BRRP)
	Federal Transit Administration (FTA) 5309
	FTA Small Starts
	FTA Section 5311(f)
	California's Bicycle Transportation Account (BTA)
	Environmental Enhancement and Mitigation (EEM) Program
	Safe Routes to School (SR2S)
	Office of Traffic Safety (OTS)
	Transportation Development Act (TDA) Article III
	Transportation Funds for Clean Air (TFCA, formerly AB 434)
	Flexible Congestion Relief (FCR) Program
	State Highway Operations and Protection Program (SHOPP)
Other Local/Regional Funding Sources	• SCAQMD has several grant programs related to air quality improvement, some of which may apply to various reduction measures. • Bus Stop Sponsorships—Advertisement sponsorship of bus stops has been utilized as a revenue source. • Transit Fare Increases—Transit fares could be increased to help fund capital improvements, though increases also have the potential to decrease ridership in the short term. • Parcel Tax—An election consistent with Proposition 218 could serve to increase the existing level of taxation and provide additional funding for transit-related capital improvements. However, in the current economic climate, this may not be a likely financing source unless economic conditions improve and community support for such a taxation approach is favorable.
Utility Rebates	• Colton Electric Department provides a variety of Energy Efficiency rebates for commercial and residential customers detailed in Chapter 2 section 2.2.2.1. • Colton Electric Department participates in the Statewide Go Solar Campaign providing residential photovoltaic solar rebates. • A small portion of Colton residents and businesses are provided power by SoCal Edison. Residents in this service territory can also benefit from a variety of rebates and the Go Solar initiative. Please see Appendix C for service territory map. • Southern California Gas Company provides a variety of rebates for

	efficiency upgrades.
Energy Upgrade California	• Program is intended for home energy upgrades. • Funded by the American Recovery and Reinvestment Act, California utility ratepayers, and private contributions. • Utilities administer the program, offering homeowners the choice of one of two upgrade packages—basic or advanced. • Homeowners are connected to home energy professionals. • Rebates, incentives, and financing are available.
Private Funding	
	• Private equity can be used to finance energy improvements, with returns realized as future cost savings. • Rent increases can fund retrofits in commercial buildings. • Net energy cost savings can fund retrofits in households. • Power Purchase Agreements (PPA) involve a private company that purchases, installs, and maintains a renewable energy technology through a contract that typically lasts 15 years. After 15 years, the company would uninstall the technology or sign a new contract. • Power produced from a PPA is sold to customers. SANBAG recently approved a contract for solar power site assessments, bringing together a number of cities and agencies to aggregate their solar sites
Other Funding Mechanisms for Implementation	
	• Increased operating costs can be supported by grants from the Strategic Growth Council (SGC) or the State Department of Conservation (DOC) to fund sustainable community planning, natural resource conservation, and development, adoption, and implementation of Sustainable Community planning elements, including climate action plans and general plan amendments.
Future Funding Options: Funding Mechanisms for Capital and/or Implementation Costs	
New Development Impact Fees	• These types of fees may have some potential to provide funding, but such fees are best implemented when the real estate market and overall regional economic conditions are strong.
General Obligation Bond	• A general obligation bond is a form of long term borrowing and could be utilized to fund municipal improvements.
AB 811 Districts Property-Assessed Clean Energy (PACE)	• AB 811 is intended to help municipalities accomplish goals outlined in AB 32. • The PACE finance program is intended to finance energy and water improvements within a home or business through a land-secured loan, and funds are repaid through property assessments. • Municipalities are authorized to designate areas where property owners can enter into contractual assessments to receive long-term, low-interest loans for energy and water efficiency improvements, and renewable energy installation on their property. • Financing is repaid through property tax bills. • AB 811 and the PACE program are currently on hold for residential properties due to potential violation of standard FHFA federally guaranteed (Fannie Mae/Freddie Mac) residential mortgage contracts.

- The PACE program is not on hold for commercial properties.
- SANBAG, as the COG, has implemented the Home Energy Renovation Opportunity (HERO; a PACE program) in the region to assist residents in financing residential energy efficiency and solar retrofits. This program will be the primary funding mechanism for reduction measure Energy-7: Solar Installation for Existing Housing.
- SANBAG will structure a regional energy efficiency and water conservation improvement loan program for existing buildings (AB 181 and AB 474).
- All PACE financiers have been approved by the City of Colton for residential and businesses

5.2.2 Additional Considerations

In addition to pursuing the funding options above and monitoring the availability of others, The City would need to take the following steps in order to best inform decisions related to the cost of GHG reductions measures.

- **Perform and Refine cost estimates.** Cost estimates for local reduction measures should be performed to identify the cost-effectiveness of each measure to inform and guide the implementation process. This analysis will likely be based on a variety of participation, per-unit, and other assumptions. As programs are developed, cost estimates should be refined and updated over time with more precise implementation-level data.
- **Integrate GHG measures into existing City budget and CIP.** Certain capital improvements may need to be added to the City's CIP and facility master plan programs, as well as those of the City utility enterprises and other public agencies that have control for project implementation. For CIPs completely under the City's control, new projects would need to be assessed for consistency with the CAP.
- **Adopt or update ordinances and/or codes.** Some local reduction measures may require new or revised ordinances (e.g., Wastewater-3: recycled water may require ordinance support for new development). Staff would need to coordinate these efforts in conjunction with planning departments, planning commissions, and City councils.
- **Pursue outside funding sources.** A range of funding from state and federal agencies has been identified. The City would need to pursue these (and other emerging) funding sources as a part of implementation efforts.
- **Implement and direct preferred City funding sources**. While City funding sources are limited, the City, when financially able, as a part of its budget process, could appropriate funding from general sources or make changes in its fee schedules, utility rates, and other sources as needed to support funding the implementation of the GHG reduction measures.
- **Create monitoring/tracking processes.** Local reduction measures will require program development, tracking, and/or monitoring. For example, Energy-7 (Promote Solar Installation for Existing Housing) would necessitate staff time to promote solar installations; the City may also want to track the number of households that participate in the program and the amount of electricity and cost saving over time.

- **Identify economic indicators to consider future funding options.** Economic recovery may occur rapidly or slowly. Whatever the timeframe, the City would need to determine the point at which certain additional funding sources may become feasible and/or favorable. Identification and monitoring of economic indicators and trends, such as home prices, energy prices cost per kWh on solar installations, unemployment rates, or real wage increases, can help the City decide when to further explore the potential for funding local reduction measures through different financing mechanisms.

5.3 Timelines for Measure Implementation

After taking into account the reductions in energy and water usage and the GHG emissions resulting from statewide measures, the City would need to implement the local reduction measures to reach its reduction targets.

The City has developed an implementation schedule for the local reduction measures. Prioritization was based on the following factors:

- Cost effectiveness
- GHG reduction efficiency
- Availability of funding
- Level of City Control
- Ease of implementation
- Time to implement.

In general consideration of these factors, the following are the key phases starting in 2015 through 2020. In addition, Table 5-2 provides a list of criteria for prioritization and Table 5-3 provides a list of measures implemented in each phase.

- **Phase 1 (2015-2016):** During Phase 1, the City will develop key ordinances, programs, policies, and procedures required to support and enforce the local mandatory GHG reduction measures such as implementation of SBX7-7. Likewise, the City would create a planning framework that would guide implementation of the voluntary measures and performance standards. Measure funding would be secured and a detailed finance plan developed. The City conducted an inventory for 2014 (in early 2015) to determine changes in emissions since 2008.
- **Phase 2 (2016–2017):** During Phase 2, the City would continue to implement measures that were begun in Phase 1. The City would evaluate the effectiveness of these measures and adapt management procedures accordingly. Likewise, the City will conduct an updated community GHG inventory to monitor emissions trends. The City would conduct an inventory for 2017 (in early 2018) to determine progress in implementing the CAP.
- **Phase 3 (2018–2020):** During Phase 3, the City would continue to implement and support measures begun in Phases 1 and 2, and encourage implementation of all remaining CAP measures (Phase 3 measures). An analysis of the effectiveness of Phase 1 and 2 measures would be conducted, as well as an updated community GHG inventory for 2019 (in early 2020). The

City could also begin developing plans for post-2020 actions during this period (see further discussion below)

To encourage implementation of all reduction measures, the CIC, with consultation from the planning commission, City council, City staff and/or other key stakeholders, would develop a CAP Implementation Timeline. Measure prioritization could be based on the following factors.

- Cost/Funding—How much does the measure cost? Is funding already in place for the measure?
- Greenhouse Gas Reductions—How effective is the measure at reducing greenhouse gases?
- Other Benefits—For example, does the measure improve water quality or conserve resources? Would it create jobs or enhance community well-being?
- Consistency with Existing Programs—Does the measure complement or extend existing programs?
- Impact on the Community—What are the advantages and disadvantages of the measure to the community as a whole?
- Speed of Implementation—How quickly can the measure be implemented and when would the City begin to see benefits?
- Implementation Effort—How difficult will it be to develop and implement the program?

A qualitative appraisal of implementation effort for the City is also provided. Measures can be categorized based on the convention of low, medium, or high, with low-level measures requiring the least level of effort by the City and being the most likely to be pursued immediately (i.e., the low hanging fruit).

Table 5-2. Implementation Matrix

Implementation Effort Level	Sample Criteria
LOW	• Requires limited staff resources to develop. • Existing programs in place to support implementation. • Required internal and external coordination is limited. • Required revisions to policy or code are limited.
MEDIUM	• Requires staff resources beyond typical daily level. • Policy or code revisions necessary. • Internal and external coordination (e.g., with stakeholders, other cities or agencies, or general public) is necessary.
HIGH	• Requires extensive staff time and resources. • Requires development of completely new policies or programs and potential changes to the general plan. • Robust outreach program required to alert residents and businesses of program requirements and eligibility. • Requires regional cooperation and securing long term funding.

The Action Priority Matrix shows an example of how different GHG reduction measures can be categorized and scheduled based on implementation effort and cost.

Figure 5-1. Activity Priority Matrix

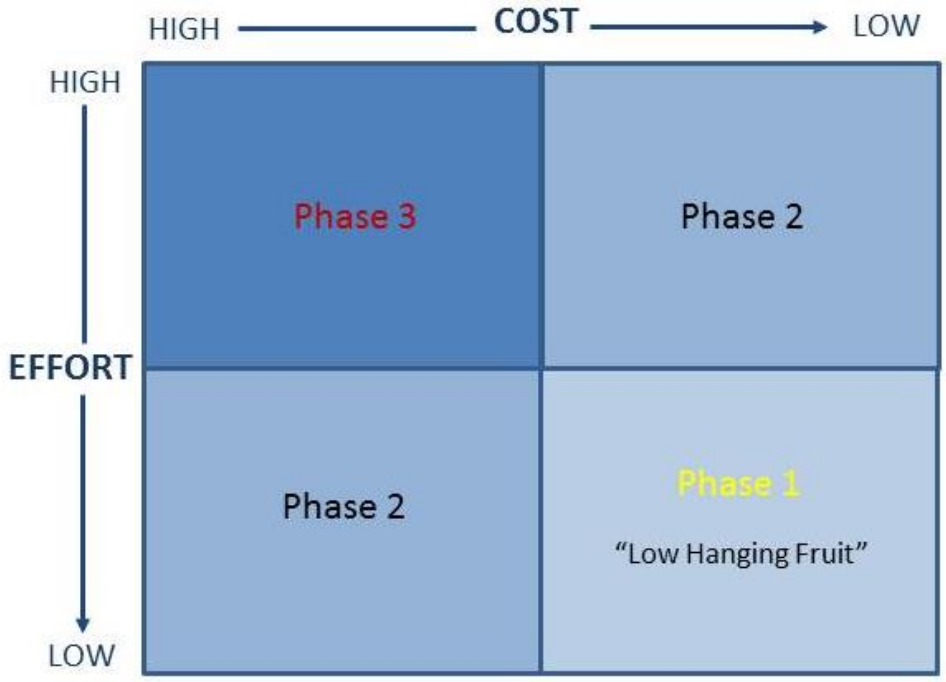


Table 5-3 translates the implementation matrix shown in Table 5-2 and Figure 5-1 and designates the phasing of the local reduction measures for the City of Colton.

Table 5-3. GHG Reduction Measure Timeline and Phasing Schedule

Reduction Measure	Phase
Energy-1: Promote Energy Efficiency for Existing Buildings	2, 3
Energy-2: Outdoor Lighting	2, 3
Energy-3: Green Building Ordinance for New Buildings	1, 2, 3
Energy-4: Solar Installations in New Housing Developments	1, 2, 3
Energy-8: Existing Commercial Renewable Energy Retrofits	1, 2, 3
On-Road 1: Sustainable Communities	1, 2, 3
On-Road 2: Smart Bus Technologies	1, 2, 3
Waste-1: Waste Diversion	1,2,3
Water 3: Water Efficient Landscaping	1, 2, 3
Water 4: Senate Bill X7-X Water Conservation	1, 2, 3
Wastewater-1: Methane Recovery (Recovery)	1,2,3
Land Use-1: Urban Tree Planting	1, 2,3
PS-1 GHG Performance Standard for New Development	1, 2, 3

5.4 Community Outreach and Education

The citizens and businesses in the City are integral to the success of the CAP and to overall reductions in GHG emissions for the region. Their involvement is essential, considering that several measures depend on the voluntary commitment, creativity, and participation of the community.

The City would educate stakeholders, such as businesses, business groups, residents, developers, and property owners, about the GHG reduction measures that require their participation, encourage participation in these programs, and alert them to program requirements, incentives and/or rebate availability, depending on the measure. The CIC would schedule periodic meetings to facilitate formal community involvement in CAP implementation and adaptation over time. This could include focused meetings for a specific measure or program such as the PACE program and/or agenda items at planning commission, City Council, or other public meetings. These meetings would be targeted to particular stakeholder groups and provide information on CAP implementation progress as well as the implementation of a specific program or new policy. Alternatively, periodic written updates could be provided in City newsletters, SANBAG's newsletter, on City websites, or through other media communications with the general public such as press releases and public service announcements. Stakeholders would be provided an opportunity to comment on potential improvements or changes to the CAP. The CIC would also sponsor periodic outreach events to directly inform and solicit the input, suggestions, and participation of the community at large.

5.5 Monitoring and Reporting

Regular monitoring is important to ensure programs are functioning as they were originally intended. Early identification of effective strategies and potential issues would enable the City to make informed decisions on future priorities, funding, and scheduling. Moreover, monitoring provides concrete data to document the City's progress in reducing GHG emissions. The CIT or CIC would be responsible for developing a protocol for monitoring the effectiveness of emissions reduction programs as well as for undertaking emissions inventory updates.

- Update GHG Inventory—The City would inventory emissions for 2014, 2017, and 2019, including regular data collection in each of the primary inventory sectors (utility, regional VMT, waste, wastewater, and water), and compare to the City's baseline GHG emissions in 2008. If SANBAG Participating Cities are interested, a combined inventory effort could be conducted through SANBAG similar to the inventory preparation that was done for this Regional Plan. The CIT or CIC would consolidate information in a database or spreadsheet that can be used to evaluate the effectiveness of individual reduction measures.
- Track State Progress—The CAP will rely heavily on state-level measures. The CIT or CIC would be responsible for tracking the state's progress on implementing state-level programs. Close

monitoring of the real gains being achieved by state programs would allow the City to adjust its CAP, if needed.

- Track Completion of GHG Reduction Measures—The CIT or CIC would keep track of measures implemented as scheduled in the CAP, including progress reports on each measure, funding, and savings. This will allow at least a rough attribution of gains when combined with regular GHG inventory updates.
- Regular Progress Reports—The CIT or CIC may report annually (or semi-annually or at other assigned intervals) to the City Council on CAP implementation progress. If annual reports, periodic inventories, or other information indicates that the GHG reduction measures are not as effective as originally anticipated, the CAP may need to be adjusted, amended, or supplemented. At a minimum, the City will conduct a 3-year review of CAP effectiveness as part of annual reporting in 2017, which would allow making mid-course adjustments in the CAP if needed to effect change prior to 2020.

5.6 Regional Cooperation

There are substantial opportunities to enhance the effectiveness of the CAP through regional collaboration. The City would explore the potential to leverage resources through regional cooperation. Potential opportunities and partners include the following.

- **SANBAG:** As the regional council of governments and the regional transportation agency, SANBAG is a logical hub of communication for Participating cities on the progress of their CAPs. Further, SANBAG will be the responsible implementing agency for many transportation-related measures that result in local GHG reductions. SANBAG is also administering the PACE program loans and a PPA for energy efficiency and solar energy for participating cities.
- **Air Districts:** The South Coast Air Quality Management District is the local agency responsible for developing and implementing air quality plans. The agencies also sponsor various air quality programs that may support implementation of several energy-efficiency, transportation, and renewable energy measures.
- **Energy Providers:** The Colton Electric Utility offers numerous incentives and rebate programs to encourage energy efficiency. Resources offered by the energy providers may reduce the costs of program implementation and administration. There may also be opportunities for cooperation on community-scale alternative energy installations (e.g., wind, solar).
- **Transportation Agencies (Omnitrans):** Continued coordination with regional transportation agencies would be necessary to fully implement the transportation reduction measures that promote mixed use development. With SB 375 and its linkage to transportation funding, it would also be crucial for the City and transportation agencies to develop a shared vision of how land use and transportation can be consistent with the next RTP and the required SCS.
- **San Bernardino County:** The County operates the landfills that receive most of the local waste in the County and has committed as part of its own CAP to improve methane control for its landfills which will help reduce emissions associated with City landfilled waste. Coordination with the county to provide the necessary facilities, programs, and incentives would help ensure this goal can be achieved by 2020, as waste services are often shared across several jurisdictions, including the unincorporated portions of the county.

- **Local Water Providers:** The City can work with the both the wholesalers and retailers of water in the City to promote reductions in indoor and outdoor water use from existing developments and achieve the goals set forth by SB X7-7.

5.7 Reducing GHG Emissions after 2020

In order to assess whether implementing this Plan achieves the state's long-term climate goals, one must look beyond 2020 to see whether the emissions reduction measures included for the 2020 milestone set the region on the trajectory toward future greater reductions in the post-2020 period.

To date, there is no state or federal mandate requiring reduction of GHG emissions after 2020. AB 32 contains no post-2020 reduction target nor provides CARB with the authority to mandate compliance with a post-2020 target. SB 375, while it contains requirements for transportation planning for the MPO (SCAG in this region) to promote reductions in the passenger and light duty vehicle sector, does not contain mandatory requirements for local jurisdictions to reduce their GHG emissions overall. However, CARB and the legislature are currently (as of later 2014) contemplating new legislation to adopt post-2020 GHG reduction targets, so it is likely that during implementation of this CAP there will be post-2020 targets established in law in California.

Governor Schwarzenegger's Executive Order S-3-05 calls for an 80% reduction below 1990 greenhouse gas emission levels by 2050. However, as noted earlier in this report, an executive order is only binding on state agencies, and does not represent a legal mandate for local governments or the private sector. Nevertheless, S-03-05 contains a reduction target that is based on a rough agreement on the basis of scientific understanding of the level of reduction needed in developed countries of the world in order to avoid the more catastrophic effects of climate change that could result from unabated rise in anthropogenic GHG emission. The 2050 target in S-03-05 is equivalent to a 2050 statewide target of about 85 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) (total emissions), as compared to the 1990 level of 427 $MMTCO_2e$. However, there is currently (as of fall 2012), no state or federal plan as to how to achieve such ambitious reductions for 2050. The CARB 2008 AB 32 Scoping Plan did discuss a general scenario of potential reductions that would be needed by 2050 to meet these targets. Similar to the AB 32 Scoping Plan, this Regional Plan shows a potential trajectory of GHG emissions reductions due to expansion of measures after 2020.

Assuming that emissions of 15% below 2008 levels (equal to 10.9 $MMTCO_2e$ for the region), excluding stationary sources) is roughly equivalent to 1990 levels, a 2050 regional goal to match the S-3-05 goals would be to achieve a level of emissions of 2.2 $MMTCO_2e$ in 2050, excluding stationary sources. Full implementation and expansion of the CARB's Scoping Plan to increase efforts beyond 2020 and expansion of the City-identified strategies included in this CAP could help to put the region on a path toward achieving these required long-term reductions. Figure 5-3 depicts what an emissions trajectory might look like, assuming the region follows a linear path from the 2020 reduction target to a 2050 goal matching that in S-03-05. While the specific measures needed to meet the 2050 goal are too far in the future to define in detail, one can examine the level of achievement that would be needed to keep the region on track through 2030. Table 5-4 examines a continuation and strengthening of measures already identified through 2020.

To stay on course toward the 2050 target, the region's greenhouse gas emissions need to be reduced to approximately 6.3 $MMTCO_2e$ by 2030. This translates to an average reduction of 5.25% per year between 2020 and 2030, or an additional 4.4 $MMTCO_2e$ in reductions during the period 2020 to

2030. An additional challenge comes from the fact that the population in the region (sum of participating cities considered in the Regional Plan) will continue to grow between 2020 and 2030 (a growth from approximately 1.73 million in 2020 to 1.96 million in 2030). Taking into account population growth, per-capita emissions would need to decrease at an average rate of approximately 0.5 $MTCO_2e$ per person per year during the 2020 to 2030 period. These reductions are possible. The measures needed are logical expansions of the programs recommended in the CARB Scoping Plan at the state level and the measures included in the Regional Plan at the local level (and the local measures included in the City's CAP). By building on planned state efforts during this period and ramped up efforts in the local building energy and transportation (and other) sectors on the part of the local governments, the region can be on track to reach a 2050 goal.

The state can help the cities in San Bernardino County, including Colton, to keep on track through 2030 by extending state action in the following ways, as described in the Scoping Plan (California Air Resources Board 2008).

- Expand vehicle efficiency regulations to achieve a 40% fleet-wide passenger vehicle reduction by 2030 (approximately double the almost 20% expected in 2020).
- Increase California's use of renewable energy in electricity generation (beyond the 33% planned for 2020).
- Reduce the carbon intensity of transportation fuels by 25% (a further decrease from the 10% level set for 2020).
- Increase energy efficiency and green building efforts (so that the savings achieved in the 2020 to 2030 timeframe are approximately double those accomplished in 2020).
- Using a regional or national cap-and-trade system to further limit emissions from the 85% of greenhouse gas emissions in capped sectors (Transportation Fuels and other fuel use, Electricity, Residential/Commercial Natural Gas, and Industry).

This Regional GHG Reduction Plan and this CAP have not assumed any benefit from a cap-and-trade system by 2020, but when implemented, such a system will result in reductions beyond those currently anticipated in the Plan for 2020, and in additional reductions for 2030. The California Cap and Trade system will particularly affect large stationary sources, which are excluded from local measures in the Regional Plan and the CAP to avoid duplication of state and federal regulatory efforts. In addition, the Cap and Trade system will also affect electricity generation and transportation fuels, which may change energy prices, which may in turn change energy use and transportation behavior beyond that assumed for the various City measures included in this Regional Plan.

It is reasonably foreseeable that as California approaches its first milestone in 2020, focus would shift to the 2050 target. A detailed plan for how the state would meet this target is expected prior to 2020 accordingly. The City of Colton and the Partnership cities will monitor developments at the national and state levels.

Figure 5-2. Required GHG Reductions in the Region to Meet the State's 2050 Target

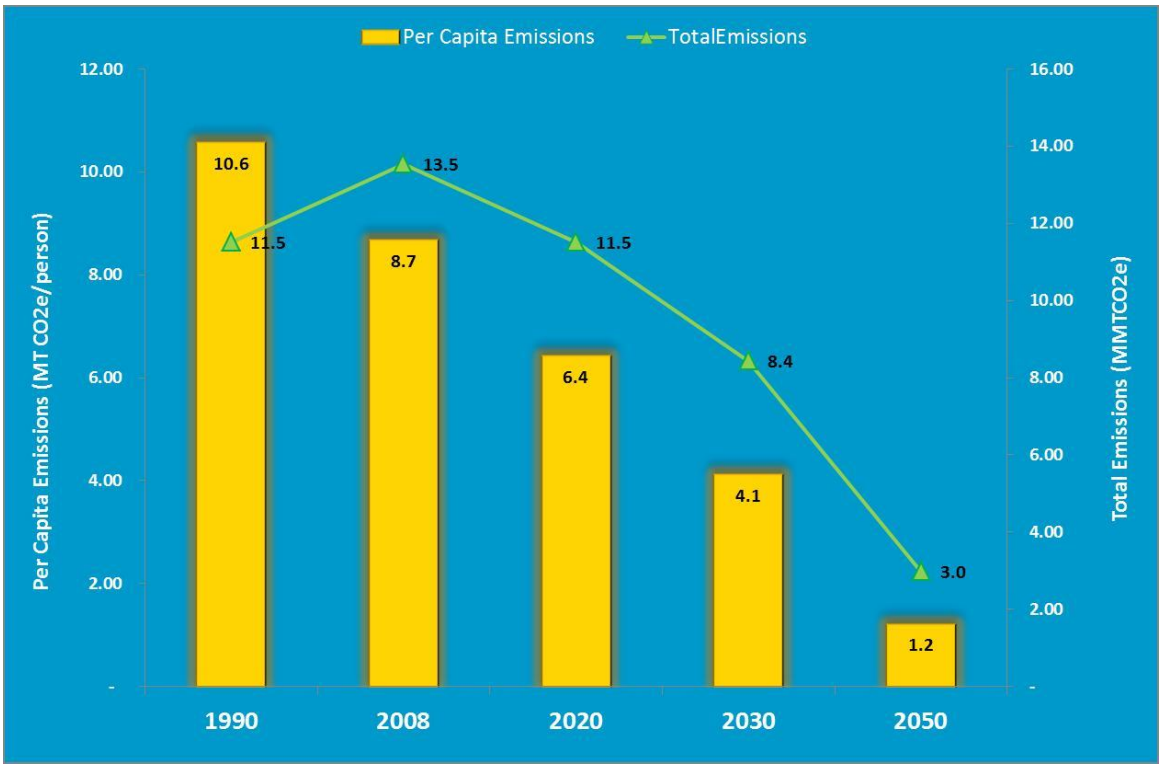


Table 5-4. Potential Regional Reduction Measures to Reach 2030 Goal

	Reductions by 2020 (This Plan)				Scenario for Reductions by 2030		
	State	Local	TOTAL	% below 2008	Total Additional Reductions 2020–2030	Effort Relative to 2008–2020	
	$MTCO_2e$	$MTCO_2e$	$MTCO_2e$	%	$MTCO_2e$	%	Notes
Building Energy (Residential, Commercial, Industrial)	1,361,486	783,954	2,145,440	39%	1,486,205	69%	CARB Scoping Plan calls for doubling of energy efficiency reductions between 2020 and 2030 (i.e., 100% effort relative to the period 2008–2020). The region would have to do 5% more in this sector to be on target. Additional GHG reductions during this period will come from a continued de-carbonization of electriCity at the public utility level, more aggressive retrofitting of existing buildings and greatly increased use of small scale renewables.
On-Road Transportation	1,839,799	54,258	1,894,057	31%	1,713,327	90%	CARB Scoping Plan calls for a doubling of GHG reductions from vehicle fleet by 2030 compared to 2020 and more than doubling reduction of carbon intensity of transportation fuels (i.e., 100% effort relative to the period 2008–2020). The region would need to do about 8% more in this sector to stay on target. SCAG assumes between 8% and 12% in GHG reductions after 2020 for 2035 for VMT reduction. This analysis assumes 8% for local reductions.
Off-Road Transportation and Equipment	78,930	37,613	116,543	15%	53,671	46%	CARB Scoping Plan calls for more than double the reduction of carbon intensity of transportation fuels (i.e., equivalent level of effort to 2008–2020 period).

	Reductions by 2020 (This Plan)				Scenario for Reductions by 2030		
	State	Local	TOTAL	% below 2008	Total Additional Reductions 2020–2030	Effort Relative to 2008–2020	
	$MTCO_2e$	$MTCO_2e$	$MTCO_2e$	%	$MTCO_2e$	%	Notes
Solid Waste Management	163,191	6,240	169,430	50%	23,733	14%	Assumed cities in the County and the County continue further efforts at methane control, waste diversion, and potential waste to energy projects to result in modest further reductions in sector (7%). Once capture technology is installed, additional reductions in this sector are somewhat limited.
Agriculture	0	79,939	79,939	16%	0	0%	No assumed change.
Wastewater Treatment	0	6,017	6,017	9%	2,115	35%	Assumed additional 3% in reduction in sector due to continued installation of fugitive emission capture technology and additional water conservation.
Water Conveyance	0	58,768	58,768	24%	12,023	20%	Assumed additional 5% in reduction in sector due to continued effort to conserve water at a similar rate as 2020-2030.
GHG Performance Standard for New Development	0	121,418	121,418	NA	0	0%	No assumed change.
TOTAL			4,591,613		3,291,074		

Chapter 6
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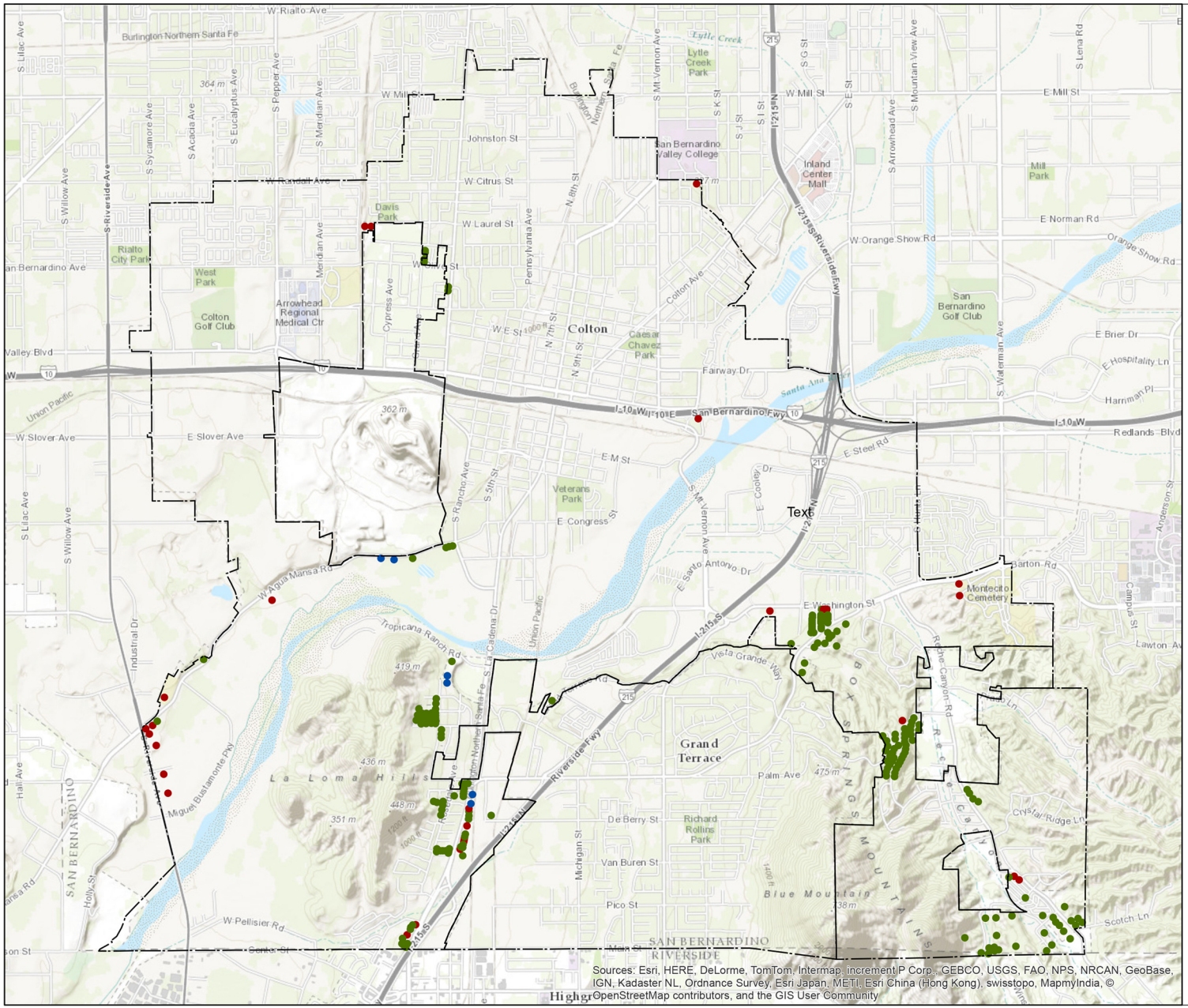

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

City of Colton

Properties Serviced By SCE
(Southern California Edison)

Legend

- Colton Boundary
- Commercial
- Residential
- Vacant

NOT TO SCALE

Date Created: April 14, 2015
Date Revised: August 4, 2015

Document Path: K:\ArcMap Projects\Electric\Properties Serviced By SCE.mxd

APN	Address	Type
16114301	880 N. RANCHO AVE	RESIDENTIAL
16114302	801 N. RANCHO AVE	RESIDENTIAL
16335120	PARCEL NO. 016335120	VACANT
16345202	606 W. AGUA MANSA RD	RESIDENTIAL
16345203	604 W. AGUA MANSA RD	RESIDENTIAL
16345207	602 W. AGUA MANSA RD	RESIDENTIAL
16348113	1651 S. BOSTICK AVE	RESIDENTIAL
16348115	11746 BOSTICK AVE	RESIDENTIAL
16401322	1112 E. GRANT AVE	COMMERCIAL
16421101	154 S. VERNON CT	COMMERCIAL
16423153	1260 S. BARTON RD	RESIDENTIAL
16423154	1250 S. BARTON RD	RESIDENTIAL
16423157	1900 HILL TOP DR	RESIDENTIAL
16425306	3524 W. WASHINGTON ST	COMMERCIAL
16425316	3520 W. WASHINGTON ST	COMMERCIAL
26006114	795 W. AGUA MANSA RD	RESIDENTIAL
26006118	2001 W. AGUA MANSA RD	COMMERCIAL
26007203	1600 W. AGUA MANSA RD	COMMERCIAL
26009116	2130 W. AGUA MANSA RD	RESIDENTIAL
26009126	2710 S. RIVERSIDE AVE	COMMERCIAL
26009128	2150 W. AGUA MANSA RD	COMMERCIAL
26009129	1810 S. RIVERSIDE AVE	COMMERCIAL
26009132	1900 S. RIVERSIDE AVE	COMMERCIAL
26009150	2250 S. RIVERSIDE AVE	COMMERCIAL
26009180	2200 S. RIVERSIDE AVE	COMMERCIAL
27409330	1102 W. LAUREL ST	COMMERCIAL
27409330	1190 W. LAURELST	COMMERCIAL
27411126	1130 N. GRAND AVE	RESIDENTIAL
27411129	1164 N. GRAND AVE	RESIDENTIAL
27411130	1104 N. GRAND AVE	RESIDENTIAL
27411131	1100 N GRAND AVE	RESIDENTIAL
27504107	820 W. AGUA MANSA RD	VACANT
27504111	700 W. AGUA MANSA RD	RESIDENTIAL
27504128	816 W. AGUA MANSA RD	VACANT
27507105	11774 TERRACE VIEW DR	RESIDENTIAL
27507120	11793 DELLA LN	RESIDENTIAL
27507121	11807 DELLA LN	RESIDENTIAL
27507124	11840 DELLA LN	RESIDENTIAL
27507125	11850 DELLA LN	RESIDENTIAL
27507130	11812 S. BOSTICK AVE	RESIDENTIAL
27507132	21272 TERRACE VIEW DR	RESIDENTIAL
27507134	11823 DELLA LN	RESIDENTIAL
27507135	21384 DELLA LN	RESIDENTIAL
27507137	11801 TERRACE VIEW DR	RESIDENTIAL
27507138	11825 TERRACE VIEW DR	RESIDENTIAL
27507140	11754 TERRACE VIEW DR	RESIDENTIAL

27507141	11850 S. BOSTICK AVE	RESIDENTIAL
27507142	11790 S. BOSTICK AVE	RESIDENTIAL
27507143	11840 S. BOSTICK AVE	RESIDENTIAL
27507144	21390 LITTON AVE	RESIDENTIAL
27507145	11800 DELLA LN	RESIDENTIAL
27507146	11795 TERRACE VIEW DR	RESIDENTIAL
27507150	11778 S. BOSTICK AVE	RESIDENTIAL
27507151	21342 DELLA LN	RESIDENTIAL
27507153	11770 TERRACE VIEW DR	RESIDENTIAL
27508211	280 S. BOSTICK AVE	RESIDENTIAL
27508224	1854 S. BOSTICK AVE	RESIDENTIAL
27508225	1850 S. BOSTICK AVE	RESIDENTIAL
27518149	22132 GAND TERRACE RD	RESIDENTIAL
27519202	PARCEL NO. 027519202	VACANT
27519203	11585 S. BOSTICK AVE	RESIDENTIAL
27616106	1223 S. CENTER DR	RESIDENTIAL
27616107	1225 S. CENTER DR	RESIDENTIAL
27616108	1229 S. CENTER DR	RESIDENTIAL
27616109	1238 S. CENTER DR	RESIDENTIAL
27616110	1237 S. CENTER DR	RESIDENTIAL
27616111	1301 S. CENTER DR	RESIDENTIAL
27616112	1305 S. CENTER DR	RESIDENTIAL
27616113	1317 S. CENTER DR	RESIDENTIAL
27616114	1321 S. CENTER DR	RESIDENTIAL
27616115	1325 S. CENTER DR	RESIDENTIAL
27616115	1327 S. CENTER DR	RESIDENTIAL
27616202	1308 S. CENTER DR	RESIDENTIAL
27616203	1304 S. CENTER DR	RESIDENTIAL
27616205	1236 S. CENTER DR	RESIDENTIAL
27616206	1234 S. CENTER DR	RESIDENTIAL
27616207	1232 S. CENTER DR	RESIDENTIAL
27616208	1228 S. CENTER DR	RESIDENTIAL
27616208	1228 S. CENTER DR	RESIDENTIAL
27616209	1220 S. CENTER DR	RESIDENTIAL
27616215	1780 E. WASHINGTON ST	COMMERCIAL
27616216	1790 E. WASHINGTON ST	COMMERCIAL
27616221	1221 S. WALIN ST	RESIDENTIAL
27616222	1225 S. WALIN ST	RESIDENTIAL
27616223	1229 WALIN ST	RESIDENTIAL
27616225	1304 S. WALIN ST	RESIDENTIAL
27616228	1760 E. WASHINGTON ST	RESIDENTIAL
27616229	1770 E. WASHINGTON ST	COMMERCIAL
27616302	1815 HILL TOP DR	RESIDENTIAL
27616303	1805 HILL TOP DR	RESIDENTIAL
27616304	23215 HILL TOP DR	RESIDENTIAL
27616305	1835 HILL TOP DR	RESIDENTIAL
27616306	1825 HILL TOP DR	RESIDENTIAL

27636165	1411 S. BARTON RD	RESIDENTIAL
27636174	1450 E. WASHINGTON ST	COMMERCIAL
27637204	1800 HILL TOP DR	RESIDENTIAL
27637210	1520 S. BARTON RD	RESIDENTIAL
27637211	1550 S. BARTON RD	RESIDENTIAL
28219209	2245 S. GLENWOOD AVE	COMMERCIAL
28228101	2210 S. GLENWOOD AVE	RESIDENTIAL
28228102	2220 S. GLENWOOD AVE	RESIDENTIAL
28228103	2230 S. GLENWOOD AVE	RESIDENTIAL
28228104	1883 S. MYRTLEWOOD AVE	RESIDENTIAL
28228106	1887 S. MYRTLEWOOD AVE	RESIDENTIAL
28228107	1911 S. MYRTLEWOOD AVE	RESIDENTIAL
28228108	1911 S. MYRTLEWOOD AVE	RESIDENTIAL
28228109	1941 S. MYRTLEWOOD AVE	RESIDENTIAL
28228112	1803 S. MYRTLEWOOD AVE	RESIDENTIAL
28228114	1916 S. MYRTLEWOOD AVE	RESIDENTIAL
28228115	1860 S. MYRTLEWOOD AVE	RESIDENTIAL
28228201	2215 S. LAURELWOOD AVE	RESIDENTIAL
28228202	2205 S. LAURELWOOD AVE	RESIDENTIAL
28228302	1953 S. LAURELWOOD AVE	RESIDENTIAL
28228303	1975 S. LAURELWOOD AVE	RESIDENTIAL
28229101	2185 E. WESTWOOD ST	RESIDENTIAL
28229103	2175 E. WESTWOOD ST	RESIDENTIAL
28229201	2100 E. WESTWOOD ST	RESIDENTIAL
28229202	2170 E. WESTWOOD ST	RESIDENTIAL
28229203	2025 E. WESTWOOD ST	RESIDENTIAL
28229204	2023 E. WESTWOOD ST	RESIDENTIAL
28229205	2190 E. WESTWOOD ST	RESIDENTIAL
28229207	2160 S. GLENWOOD AVE	RESIDENTIAL
28229208	2150 S. GLENWOOD AVE	RESIDENTIAL
28229209	2140 S. GLENWOOD ST	RESIDENTIAL
28229210	2130 S. GLENWOOD AVE	RESIDENTIAL
28229211	2120 W. GLENWOOD AVE	RESIDENTIAL
28229212	2110 S. GLENWOOD AVE	RESIDENTIAL
28229301	2090 S. GLENWOOD AVE	RESIDENTIAL
28229302	2080 S. GLENWOOD AVE	RESIDENTIAL
28229303	2070 S. GLENWOOD AVE	RESIDENTIAL
28229304	2060 S. GLENWOOD AVE	RESIDENTIAL
28229305	2036 S. GLENWOOD AVE	RESIDENTIAL
28229306	2030 S. GLENWOOD AVE	RESIDENTIAL
28229307	2024 S. GLENWOOD AVE	RESIDENTIAL
28229308	2017 S. GLENWOOD AVE	RESIDENTIAL
28229309	2012 S. GLENWOOD AVE	RESIDENTIAL
28229310	2006 S. GLENWOOD AVE	RESIDENTIAL
28229311	2000 S. GLENWOOD ST	RESIDENTIAL
28421131	12640 S. RECHE CANYON RD	RESIDENTIAL
28421136	12739 S. RECHE CANYON RD	RESIDENTIAL

28421142	12787 S. RECHE CANYON RD	RESIDENTIAL
28421143	24434 SCOTCH LN	RESIDENTIAL
28421144	12721 SCOTHC LN	RESIDENTIAL
28421237	2777 RECHE CANYON RD	RESIDENTIAL
28421238	2787 S. RECHE CANYON RD	RESIDENTIAL
28421243	2671 S. RECHE CANYON RD	COMMERCIAL
28421244	2651 S. RECHE CANYON RD	COMMERCIAL
28421246	12744 S. RECHE CANYON RD	RESIDENTIAL
28421250	12840 S. RECHE CANYON RD	RESIDENTIAL
28421251	12798 S. RECHE CANYON RD	RESIDENTIAL
28421252	12867 S. RANCH RD	RESIDENTIAL
28421258	2820 S. RECHE CANYON RD	RESIDENTIAL
28421261	12712 S. RECHE CANYON RD	RESIDENTIAL
28421269	2751 S. RECHE CANYON RD	RESIDENTIAL
28421269	12472 S. RECHE CANYON RD	RESIDENTIAL
28421271	2800 S. RECHE CANYON RD	RESIDENTIAL
28421272	12472 S. RECHE CANYON RD	RESIDENTIAL
28421279	2851 DARK CANYON RD	RESIDENTIAL
116702117	2981 S. LA CADENA DR	COMMERCIAL
116702118	3003 S. LA CADENA DR	RESIDENTIAL
116702119	2991 S. LA CADENA DR	RESIDENTIAL
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116702125	2861 S. LA CADENA DR	COMMERCIAL
116702125	2943 S. LA CADENA DR	RESIDENTIAL
116702126	2945 S. LA CADENA DR	RESIDENTIAL
116702126	2941 S. LA CADENA DR	RESIDENTIAL
116703107	12270 S. ROSEDALE AVE	RESIDENTIAL
116703107	12270 S. ROSEDALE AVE	RESIDENTIAL
116703109	12234 S. ROSEDALE AVE	RESIDENTIAL
116703110	12232 S. ROSEDALE AVE	RESIDENTIAL
116703111	12200 S. ROSEDALE AVE	RESIDENTIAL
116703112	21385 HILL RD	RESIDENTIAL
116703113	21309 HILL RD	RESIDENTIAL
116704104	12175 S. ROSEDALE AVE	RESIDENTIAL
116705107	12209 S. LA CADENA DR	VACANT
116705107	12111 S. LA CADENA DR	VACANT
116705108	12120 S. LA CADENA DR	RESIDENTIAL
116705109	21553 W. PALM AVE	RESIDENTIAL
116705110	21535 W. PALM AVE	RESIDENTIAL
116705111	12146 S. LA CADENA DR	RESIDENTIAL
116705112	12158 S. LA CADENA DR	RESIDENTIAL
116705113	12170 S. LA CADENA DR	RESIDENTIAL
116705114	12184 S. LA CADENA DR	RESIDENTIAL
116706101	12229 S. LA CADENA DR	COMMERCIAL
116706102	12231 S. LA CADENA DR	RESIDENTIAL

116706103	12237 S. LA CADENA DR	RESIDENTIAL
116706104	12247 S. LA CADENA DR	RESIDENTIAL
116707103	12265 S. LA CADENA DR	COMMERCIAL
116707108	12301 S. LA CADENA DR	RESIDENTIAL
116707109	12345 S. LA CADENA DR	COMMERCIAL
116707109	12331 S. LA CADENA DR	COMMERCIAL
116707109	12325 S. LA CADENA DR	COMMERCIAL
116707109	12309 S. LA CADENA DR	RESIDENTIAL
116708102	111 W. LA LOMA AVE	RESIDENTIAL
116708103	12444 S. LA CADENA DR	RESIDENTIAL
116708104	12452 S. LA CADENA DR	RESIDENTIAL
116708105	2427 S. LA CADENA DR	RESIDENTIAL
116708106	12377 S. LA CADENA DR	RESIDENTIAL
116708107	12858 S. LA CADENA DR	RESIDENTIAL
116708107	12857 S. LA CADENA DR	RESIDENTIAL
116708108	12401 S. LA CADENA DR	COMMERCIAL
116708119	115 W. LA LOMA AVE	RESIDENTIAL
116708120	119 W. LA LOMA AVE	RESIDENTIAL
116708121	2486 S. ROSEDALE AVE	RESIDENTIAL
116708122	2490 S. ROSEDALE AVE	RESIDENTIAL
116711117	2640 S. LA CADENA DR	RESIDENTIAL
117834106	2200 S. RECHE CANYON RD	RESIDENTIAL
117834107	2210 S. RECHE CANYON RD	RESIDENTIAL
117834112	2130 S. RECHE CANYON RD	RESIDENTIAL
117834113	2170 S. RECHE CANYON RD	RESIDENTIAL
117839103	12572 DARK CANYON RD	RESIDENTIAL
117839104	2765 DARK CANYON RD	RESIDENTIAL
117839105	2782 DARK CANYON RD	RESIDENTIAL
117839106	2773 DARK CANYON RD	RESIDENTIAL
117839109	2793 DRK CANYON RD	RESIDENTIAL
117839110	2769 DARK CANYON RD	RESIDENTIAL
117839113	2741 DARK CANYON RD	RESIDENTIAL
117839115	2759 DARK CANYON RD	RESIDENTIAL
117839115	2757 DARK CANYON RD	RESIDENTIAL
117839116	2745 DARK CANYON RD	RESIDENTIAL

RESOLUTION NO. R-119-15

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF COLTON ADOPTING THE COLTON CLIMATE ACTION PLAN IDENTIFYING MEASURES TO REDUCE GREENHOUSE GASES (GHG) EMISSIONS UNDER THE CITY'S JURISDICTIONAL CONTROL AND MAKING RESPONSIBLE AGENCY FINDINGS PURSUANT TO CEQA. (FILE INDEX NO.: DAP-001-204)

WHEREAS, the analysis and reduction of greenhouse gases (GHG) emissions is required by certain Federal and State regulations, including Executive Order S-3-05 (Greenhouse Gas Emission Targets), Assembly Bill 32 (the California Global Warming Solutions Act), Executive Order S-3-08 (Climate Adaptation and Sea Level Rise Planning Directive), Senate Bill 375 (Regional Transportation Plan and Sustainable Communities Strategy), and CEQA Guidelines §15183.5(b)(1) Tiering and Streamlining the Analysis of Greenhouse Gas Emissions; and

WHEREAS, in compliance with the above legislation, the City of Colton participated with the San Bernardino Associated Governments (SANBAG) and 20 other cities in the region in the development and adoption of the San Bernardino County Regional GHG Reduction Plan ("Regional Plan"); and

WHEREAS, the environmental effects of the proposed Colton Climate Action Plan were reviewed pursuant to the California Environmental Quality Act ("CEQA") through the preparation and public circulation of the Programmatic EIR ("EIR") for the San Bernardino County Regional GHG Reduction Plan; and

WHEREAS, on March 5, 2014, the San Bernardino County Regional GHG Reduction Plan was adopted and the Programmatic EIR for the Regional Plan was certified by SANBAG; and

WHEREAS, the Programmatic Environmental Impact Report (EIR) analyzed the environmental effects of the San Bernardino County Regional GHG Reduction Plan and included an analysis of the environmental effects and mitigation that would occur in the City of Colton resulting from the implementation of the CAP; and

WHEREAS, the San Bernardino County Regional GHG Reduction Plan included baseline GHG emissions attributable to the areas within the jurisdictional control of the City of Colton, future projections out to year 2020 on how GHG emissions will change over time in Colton, an AB 32 compliant Reduction Target for the City of Colton, local reduction measures for the City of Colton to implement, and a quantified demonstration showing that implementation of the State, regional, and local reduction measures will reach the Year 2020 Reduction Target within the City of Colton; and

WHEREAS, the City of Colton's implementing authority over the Reduction Plan, is limited to the City's CAP, and, therefore, is a responsible agency for the Plan pursuant to the requirements of CEQA; and

WHEREAS, the City of Colton, using the technical information in the San Bernardino County Regional GHG Reduction Plan, has prepared the Colton Climate Action Plan that addresses climate change impacts through year 2020; and

WHEREAS, a draft of the Colton Climate Action Plan was made available for public review on August 5, 2015 and at an introductory meeting held by the Planning Commission on August 25, 2015; and

WHEREAS, the Planning Commission adopted Resolution No. R-17-15 recommending to the City Council the adoption of the draft Colton Climate Action Plan document at their meeting on September 23, 2015; and

WHEREAS, the City Council considered the adoption of the Colton Climate Action Plan at their meeting on November 3, 2015.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF COLTON:

SECTION 1. The Recitals set forth above are true and correct and are incorporated herein by reference; and

SECTION 2. The Colton Climate Action Plan (CAP) fulfills Federal and State regulations relative to analysis and reduction of greenhouse gases (GHG) emissions within the City's jurisdictional control; and

SECTION 3. The Colton Climate Action Plan (CAP) is consistent with the Colton General Plan; and

SECTION 4. The Colton Climate Action Plan (CAP) is a plan for the reduction of greenhouse gas emissions at a city-wide level that complies with the provisions of CEQA Guidelines §15183.5(b)(1) Tiering and Streamlining the Analysis of Greenhouse Gas Emissions because:

1. The Colton Climate Action Plan quantifies greenhouse gas emissions for both existing (2008) and projected (2020) resulting from land use activities covered within the Colton General Plan; and

2. The Colton Climate Action Plan established greenhouse gas reduction targets, based on Assembly Bill 32, Executive Order S-3-05, and the Colton Climate Action Plan, less than the contribution to greenhouse gas emissions from activities covered in the Colton General Plan and would be cumulatively considerable; and

3. The Colton Climate Action Plan identified and analyzed the greenhouse gas emissions resulting from categories of actions anticipated within the geographic area covered by the Colton General Plan; and

4. The Colton Climate Action Plan specifies greenhouse gas reduction measures that substantial evidence demonstrates once implemented on a project-by-project basis, would collectively achieve the greenhouse gas reduction targets; and

5. The Colton Climate Action Plan, Chapter 5-Implementation, establishes a mechanism to monitor the progress toward achieving the reduction targets, and when corrective action is warranted based upon monitoring, amend or revise the Colton Climate Action Plan in order to make corrective actions that will result in achieving the reduction targets.

SECTION 5. The City Council finds that the EIR reflects the independent judgment and analysis of the City Council, that it contains a complete and accurate reporting of the environmental impacts associated with the Reduction Plan, and was completed in compliance with CEQA and the State CEQA Guidelines. The City Council further (1) concurs with SANBAG's environmental findings regarding the EIR and adopts those findings; (2) finds that there are no additional feasible mitigation measures or alternatives within its powers that would substantially lessen or avoid any significant effects that the Reduction Plan would have on the environment; (3) concurs with and adopts SANBAG's Statement of Overriding Considerations and (4) adopts the Mitigation Monitoring and Reporting Program approved by SANBAG.

SECTION 6. Based on the entire record before the City Council and all written and oral evidence presented, including the staff report, the City Council hereby adopts the Colton Climate Action Plan (CAP).

SECTION 7. The City Clerk shall certify to the adoption of this Resolution.

SECTION 8. This Resolution shall become effective immediately upon its adoption.

PASSED, APPROVED AND ADOPTED this 3rd day of November, 2015.

RICHARD A. DELAROSA, Mayor

ATTEST:

CAROLINA R. PADILLA, City Clerk

STATE OF CALIFORNIA)
COUNTY OF SAN BERNARDINO) **ss**
CITY OF COLTON)

CERTIFICATION

I, CAROLINA R. PADILLA, City Clerk of the City of Colton, California, do hereby certify that the foregoing is a full, true and correct copy of **RESOLUTION NO. R-119-15**, duly adopted by the City Council of said City, and approved by the Mayor of said City, at its Regular Meeting of said City Council held on the **3rd day of November, 2015**, and that it was adopted by the following vote, to wit:

AYES:	COUNCILMEMBER	Toro, Jorrin, Navarro, González, Bennett, Suchil and Mayor DeLaRosa
NOES:	COUNCILMEMBER	None
ABSTAIN:	COUNCILMEMBER	None
ABSENT:	COUNCILMEMBER	None

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City of Colton, California, this _____ day of _____, 20___.

_____
CAROLINA R. PADILLA
City Clerk
City of Colton

(SEAL)